

Kebutuhan Pola Hidup Hijau dalam Kehidupan Kampus

Junaidi Wakil Ketua UI GreenMetric World University Rankings



Workshop Persiapan Perankingan UI GreenMetric Universitas Ahmad Dahlan

23 Desember 2020

Isu dan Tantangan

Biaya perawatan kampus

Kebersihan, keindahan, dan keselamatan

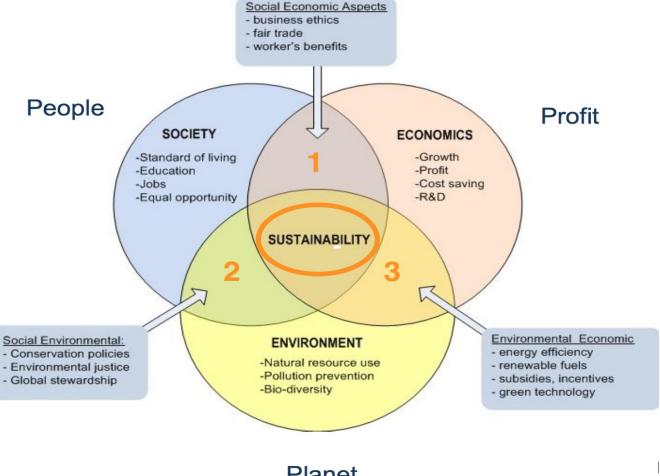
Manajeman pengelolaan kampus

Kesadaran lingkungan yang bersih, sehat, aman dan berkelanjutan













Keberlanjutan (sustainability) berarti memenuhi kebutuhan kita sekarang tanpa mengganggu kemampuan generasi mendatang untuk memenuhi kebutuhan mereka (Brundtland Commission 1987). Konsep ini mencakup 3 pilar: lingkungan hidup, tanggung jawab sosial, dan ekonomi.

UI GreenMetric dan SDGs



Cara mewujudkan kampus lestari/hijau

More space for greenery and in safeguarding environment, as well as the campus sustainable development budget

Setting and Infrastructure

Increase the effort in using energy efficiency appliances and develop renewable energy

Energy and Climate Change



Some programs and waste treatments (i.e. recycling program, toxic waste, organic and inorganic waste, etc)

Waste



Decrease groundwater usage, increase conservation program, and protect the habitat

Water



15%

Transportation policy to limit the number of private vehicles, pedestrian

Transportation



Courses, research, publication, website, report related to green and sustainability

Education and Research





UI GreenMetric World University Rankings 2020



Cara mewujudkan kampus lestari/hijau

Kriteria Indikator	Setting and Infrastructure	Energy and Climate Change	Waste
1	The ratio of open space area to total area	Energy efficient appliances usage	Recycling program for university's waste
2	Total area on campus covered in forest vegetation	Smart building implementation	Program to reduce the use of paper and plastic on campus
3	Total area on campus covered in planted	Number of renewable energy sources on campus	Organic waste treatment
4	Total area on campus for water absorption besides the forest and planted	Total electricity usage divided by total campus' population	Inorganic waste treatment
5	The total open space area divided by total campus population	The ratio of renewable energy production divided by total energy usage per year	Toxic waste treatment
6	Percentage of university budget for sustainability efforts within a year	Elements of green building implementation as reflected in all construction and renovation policies	Sewage disposal
7		Greenhouse gas emission reduction program	
8		Total carbon footprint divided by total campus' population	UI GreenMetric World University Rankings 2020

Cara mewujudkan kampus lestari/hijau

Kriteria	Water	Transportations	Education
Indikator	vvalci		Luucation
1	Water conservation program & implementations	The total number of vehicles (cars and motorcycles) divided by total campus' population	The ratio of sustainability courses to total courses/subjects
2	Water recycling program implementation	Shuttle services	The ratio of sustainability research funding to total research funding
3	Water efficient appliances usage	Zero Emission Vehicles (ZEV) policy on campus	Number of scholarly publications on sustainability
4	Consumption of treated water	The total number of Zero Emission Vehicles (ZEV) divided by total campus population	Number of events related to sustainability
5		Ratio of ground parking area to total campus' area	Number of student organizations related to sustainability
6		Program to limit or decrease the parking area on campus for the last 3 years (from 2017 to 2019)	University-run sustainability website
7		Number of initiatives to decrease private vehicles on campus	Sustainability report
8		Pedestrian path on campus	UI GreenMetric World University Rankings 2020

Contoh Implementasi

Best Practice - Energy and Climate Change

Energy Efficiency - Wageningen University and Research

3.1 Energy

WUR has committed itself to the third Multi-Year Agreement for Energy (MJA-3). The most important obligation arising from this Agreement is to improve energy efficiency by 30% in the period 2005-2020. This improvement of 2% per year can be achieved by reducing energy consumption, generating sustainable energy or purchasing sustainable energy generated elsewhere.

WUR will comply with the commitments which follow from the MJA-3, leading to the following results:

- The energy management implementation programme has been completed and the quality control has been embedded in the procedure.
- The measures from the 2017-2020 energy efficiency plan are being carried out, including the sustainable energy supply project for Campus Noord in Wageningen.
- The energy incentive has been rolled out. The organisational components will be made responsible for their own budgets to give insight into their energy consumption and further stimulate energy saving. Reference years have been established for PSG (2011), ASG (2013), ESG (2013), SSG (2014) and AFSG (2017).

Energy Efficiency - Wageningen University and Research



Separate freezers in laboratories in the Radix building were replaced by Polaris, a central, energy efficient, facility for freezing of research material at ultra-low temperatures. See: central facility for freezing of research material.



10

List and Description of Smart Building Requirements

	Field		Requirement	Description
B Automation		B1	BMS	Presence of Building Management System (BMS) / Building Information Modelling (BIM) / Building Automation System (BAS) / Facility Management System (FMS) (recommended requirement)
		B2	APP	Interactive support for users via APP or online service
S	Safety	S1	Intruder Alarm System	Intruder alarm system (recommended: interfaced with BMS)
		S2	Fire-fighting	Fire-fighting system (recommended: interfaced with BMS)
		S3	Video surveillance	Video surveillance system (recommended: interfaced with BMS)
		S4	Anti-flooding	Anti-flooding system (recommended: interfaced with BMS)
E	Energy	E1	Monitoring	Automatic acquisition and logging system of energy consumption (recommended: interfaced with BMS)
		E2	Management	Automatic management system for energy supplies and production (recommended: interfaced with BMS)
A	A Water A1		Monitoring	Automatic acquisition and logging system of water consumption (recommended: interfaced with BMS)
		A2	Recovery	Rainwater recovery system for covering the flushing and irrigation
ı	I Indoor environment		Thermal comfort	Monitoring (recommended: interfaced with BMS) of environmental parameters related to thermo-hygrometric comfort (e.g. air temperature, relative humidity, air velocity, etc.)
		12	Air quality	Monitoring (recommended: interfaced with BMS)of pollutants (e.g. VOC, PM, CO2)
		13	Real-time	Programming and management in real time according to the occupancy profile of the premises (recommended: interfaced with BMS)
		14	Passive system	Passive cooling and/or exploitation/limitation systems for free supplies
L	Lighting	L1	LEDs	High-efficiency luminaires (LEDs)
		L2	Sensors	Automatic lighting control (recommended: presence/illuminance sensors interfaced with BMS)
		L3	Shielding	Shielding adjustment and solar control
		L4	Natural light	Passive systems for natural light exploitation

Note

Please state the Building Management System (BMS) / Building Information Modelling (BIM) / Building Automation System (BAS) / Facility Management System (FMS) used in your university

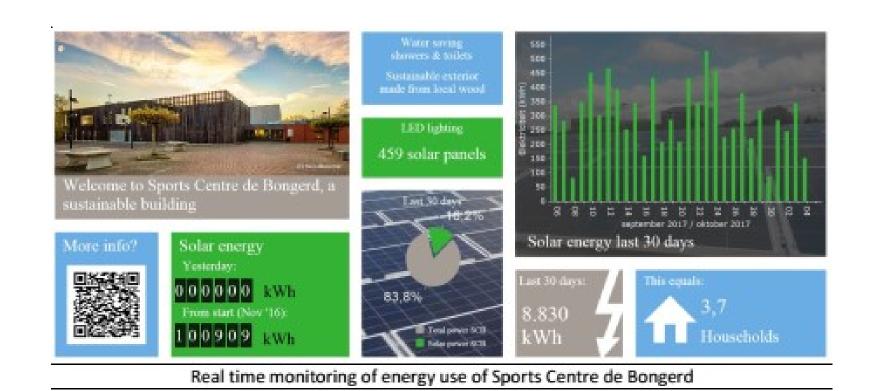
Adapted from 'UI GreenMetric 2018: Energy and Climate Change Guidelines for Compilation', by RUS Energia, 2019.

Smart Building Requirements





Sustainable Building - Wageningen University and Research



Smart Building Implementation

Fakultas Teknik Universitas Indonesia

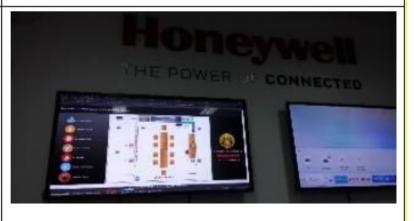
Honeywell-UI Smart Connected Engineering Campus

Equipment utilization of SIMPEL (Sistem Monitoring Penggunaan Energi Listrik) or Monitoring System of Electrical Energy Usage that can be see in by online.









Sustainable Energy for Charging – FT UI



Solar Power Plant of Engineering Center Faculty of Engineering



iolar Power Plant of Engineering Park Faculty of Engineering



Clean Biomass Faculty of Engineering

Sustainable Energy for Charging - Universidad Rosario



Green Building Implementation - Wageningen University & Research



Data of Composition and Processing Method-Wageningen University & Research

Composition of waste from WUR and processing method per waste flow:

Waste flow	Processing method
Residual & bulky waste	Thermal recycling (waste incineration installations with R1 status)
Old paper & cardboard	Shredding & recycling
Hazardous waste	Various processing methods:
	 Due to the health risks, specific hospital waste and animal
	waste material must be processed by the specialist companies
	Zavin (burning with energy recovery) and Rendac (destruction,
	production of biofuel).
	 Toxic waste must be burned (by specialist companies) in a
	rotary drum furnace (with energy recovery).
Animal waste	Destruction, production of biofuel
Garden waste/green waste/swill	Recycling (fermentation)
Glass	Recycling
Plastic	Recycling
Rubble/construction &	Sorting & recycling
demolition waste	
Other	Recycling





Instalasi Pengolahan Air Limbah Domestik FT - UI



Instalasi pengolahan air limbah domestik (IPAL) tangki anaerobik dengan kapasitas 5 m3/hari sudah terpasang di Kantin Mahasiswa, terpasang di bawah tanah. Air keluaran IPAL dimanfaatkan untuk sumber air pada tanaman hias di sekitar kantin (Up Cycling)

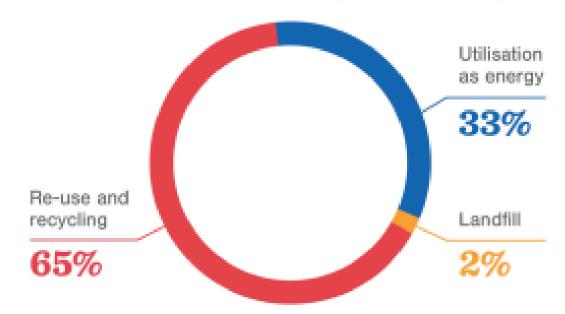


Instalasi pengolahan air limbah domestik (IPAL) dengan kapasitas 5 m3/hari sudah terpasang di Departemen Teknik Metalurgi tahun 2018 (terpasang di atas tanah) dan direncanakan akan menambah dua unit yang akan dipasang di Departemen Teknik Sipil dan Departemen Teknik Kimia. Air keluaran IPAL dialirkan ke sumur resapan dan untuk menyiram rumput. (Up Cycling)



Handling method of waste – Aalto University

Waste amounts according to handling method 2017



Waste Management - University of Zanjan



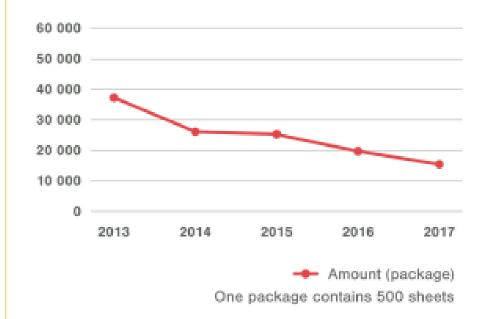


[3.1] Program to Reduce The Use of Paper and Plastic in Campus Waste management: paperless policy ← → C ① www.pru.ac.ir ← → C ① www.znu.scir tz # Bookmarks 🖹 Suggested Sites خرمان الكنونيكان + دانشجوری + بالشطول ◆ Igal-Lei ving épiñés. آزشیو کتب الکترونیکی دانشگاه بقارت داشگافی (سناد) Special Complete ادارات و مراکز نرم افزار معرفات دانشگاه (موزنزر) أناؤات وحراكز Sper perject *

Paper Consumption – Aalto University

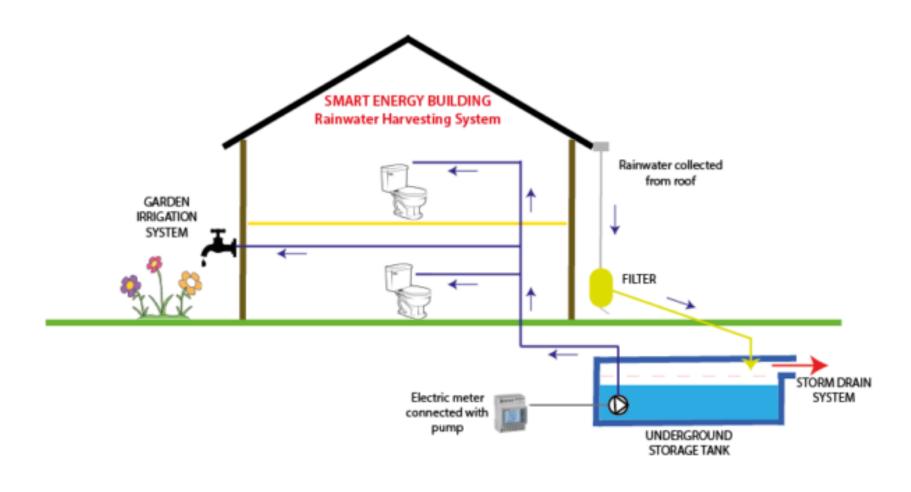
The university's service functions have continued to integrate sustainable development perspectives into their operations. A substantial change in support of sustainability is the reform implemented by IT Services in the model used for
printing. The Secureprint method reduces paper consumption, facilitates multisite work and improves data security.
Through active communications, Aalto strives to reach the wider community by e.g. annual observance of Earth Hour,
sponsored by the World Wide Fund for Nature (WWF), and by participating in Finland's national energy saving week.
Aalto University's real estate company ACRE, for its part, opened its Aalto Green Campus website in autumn 2017.
In addition, the Aalto Code of Conduct was introduced during the year for everyone in the Aalto community.

Copy paper consumption



The university's service functions have continued to integrate sustainable development into their operations. The switch to Secure print method by Aulto IT has helped reducing paper consumption.

Rainwater collection system – Università degli studi di Genova

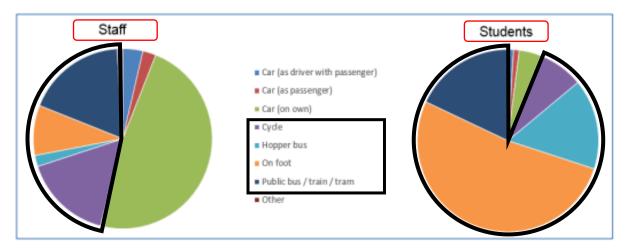


Zero Emission Vehicle - Nottingham University



Transportation – Nottingham University

- · 25% of staff respondents commute on foot or by bike
- Car use continues to be the dominant mode for staff commuting to the University.
- 60% of student respondents commute on foot or by bike
- Students commuting by car on their own has decreased from 7% in 201 to 4% in 2017
- 67% of staff respondents consider they are required to travel between campuses as part of their work.
- 28% of student respondents consider they are required to travel to othe campuses as part of their studies.
- 40% of student respondents travelling by public transport pay a cash far on the day and 38% hold NCT's academic year pass
- 79% of staff respondents are aware of the University's cycle to work schemes for purchasing a bike
- 29% of respondents who are cyclists have used the free Dr Bike service
- 41% of respondents who are cyclists are aware of the Brighten Up campaign



Events related to sustainability - Wageningen University & Research

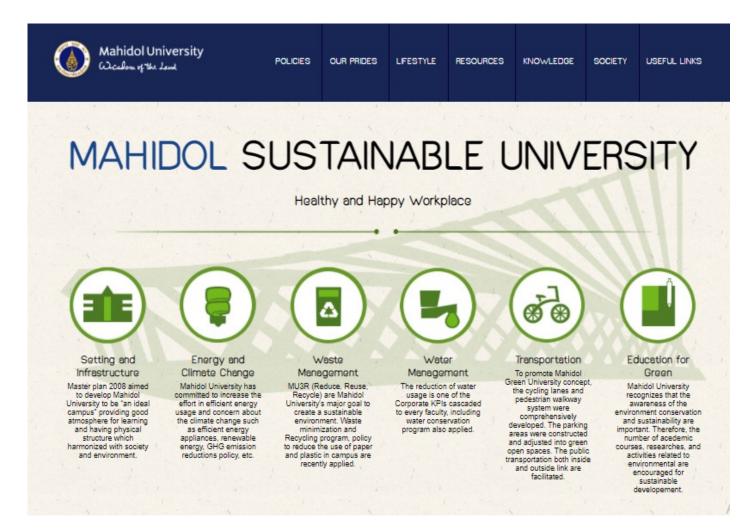
SERIOUSLY SUSTAINABLE

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Seriously Sustainable Week: https://www.wur.nl/en/newsarticle/Seriously-Sustainable-Week-2.html



Sustainability Website - Mahidol University



Website is available, accessible, and updated regularly

https://www.mahidol.ac.th/sustainable/

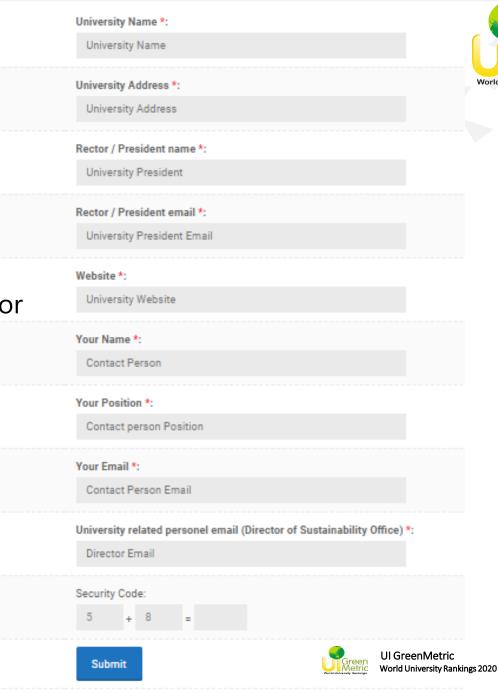




How do you participate UI GreenMetric?

If your University would like to join the UI GreenMetric and have not received the invitation, you can registration via web

at: http://greenmetric.ui.ac.id/registration-page/ or contact us via email: at greenmetric@ui.ac.id

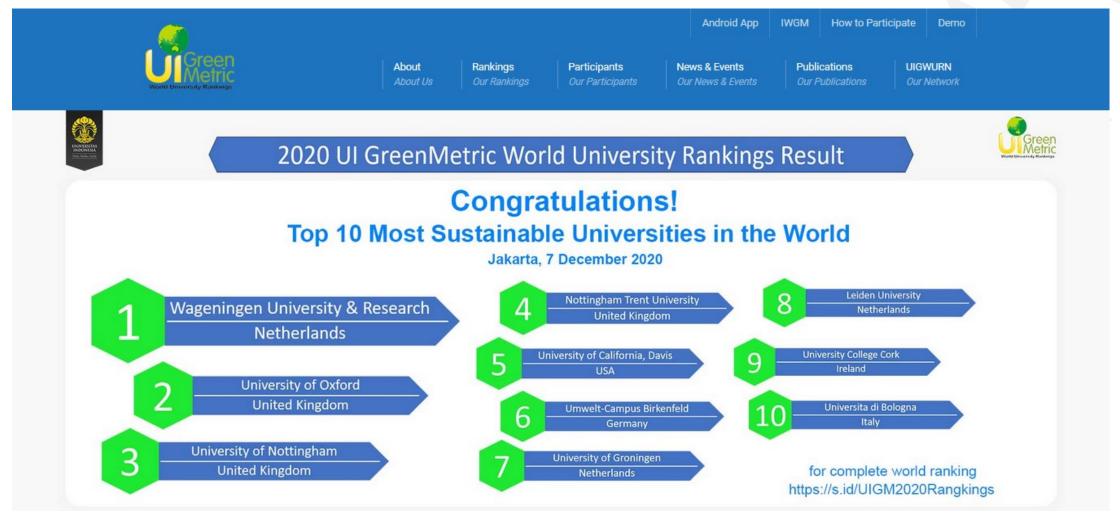


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How do you participate UI GreenMetric?



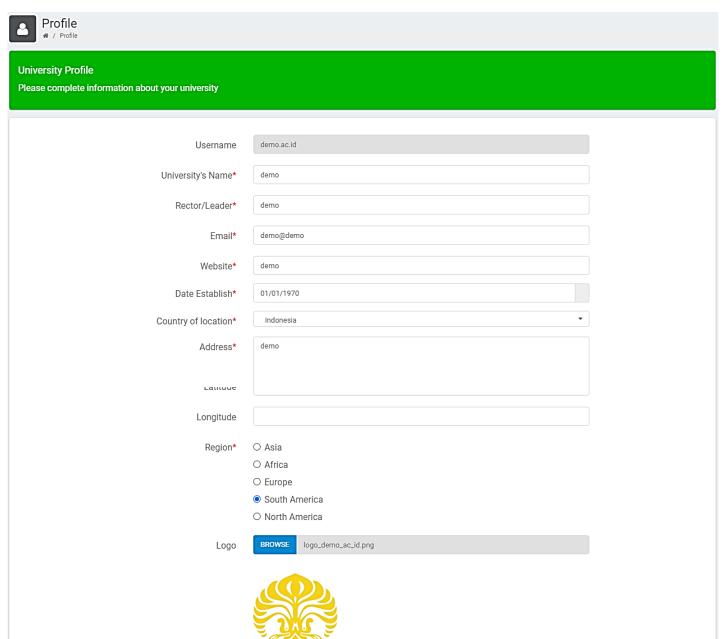








UI GreenMetric Questionnaire Online Questionnaire – Profile











UI GreenMetric Questionnaire Online Questionnaire Profile

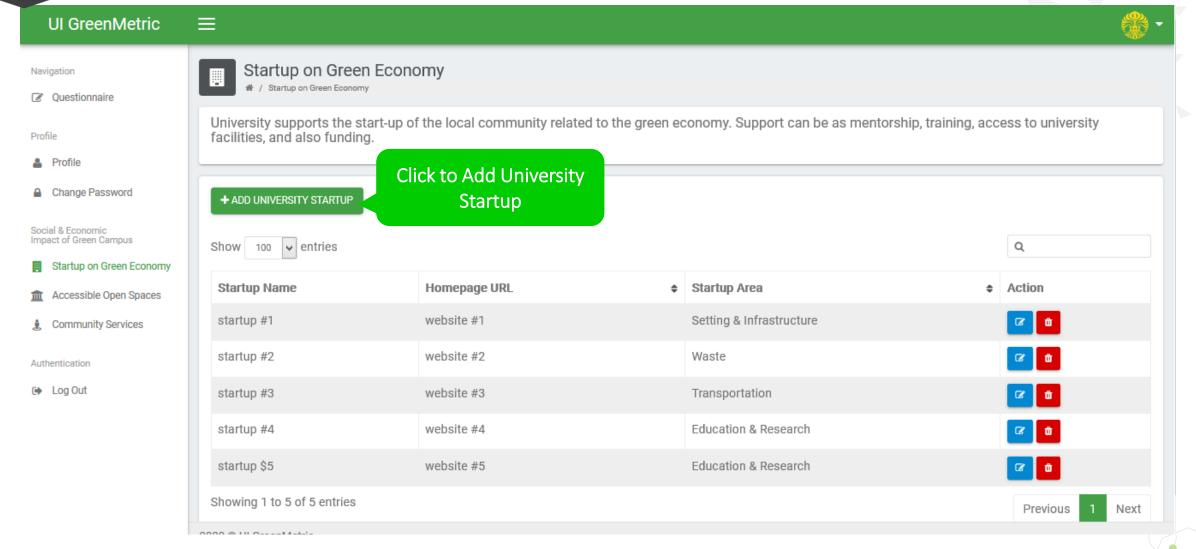
Network and Partners		
Local Network	× Acafe × Network that never exist × Pacific Pharmaceuticals Ltd.	
	*ps: "If you could not find the networks within the list, you can add them yourself."	
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International Network (eg: ISCN, GULF, UIGWURN, other (Please Specify))	× deredere	
Partner (Industry, Government, Community, Education)	× redred	
PIC for Green Campus Information Please provide data of Person in charge in filling in this info	ormation.	
Name of PIC*	Joko Supiaisi	
Position of PIC*	Rector	
Email of PIC*	smdfkl@NKJGDFG.gdf	





UI GreenMetric Questionnaire Social & Economic Impact Page

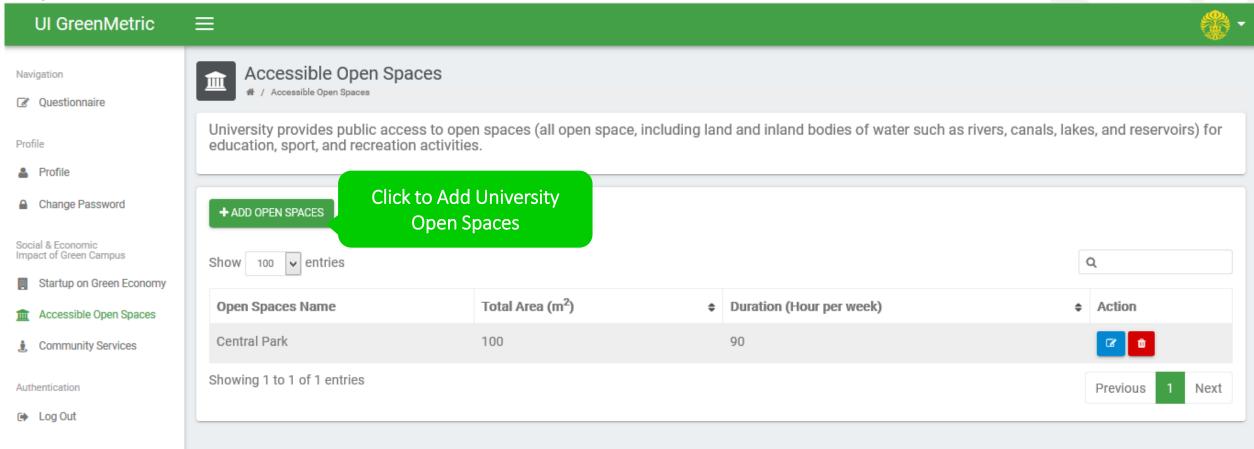






UI GreenMetric Questionnaire Social & Economic Impact Page

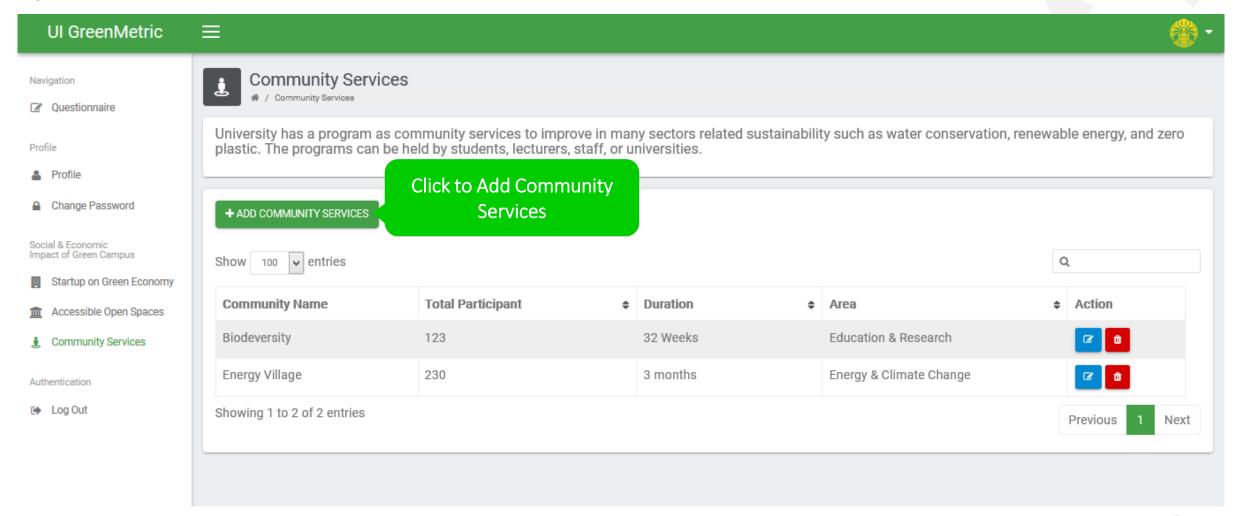






UI GreenMetric Questionnaire Social & Economic Impact Page









UI GreenMetric Questionnaire Online Questionnaire Page



UI GreenMetric





Navigation



Profile

- Profile
 - Change Password

Sosial & Economic Impact of Green Campus

- Startup on Green Economy
- m Accessible Green Spaces



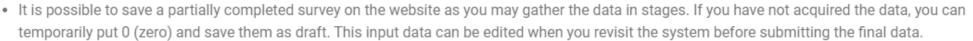
The size of text option



Ouestionnaire

/ Ouestionnaire

Important Notes



- Numerical data should be typed without comma or dot (example, 1000 not 1.000)
- · For filling in percentage data, you can put a dot (.) for decimal number.
- Decimal number is separated by a dot (not a comma) (example: "two thousands point three" must be written as "2000.3"
- Please provide the evidence document in .doc/.docx/.pdf format, which should be less than 2MB for each question.
- You can find a template for some questions that require evidence at the end of each question.
- Please submit the latest yearly (annual) data that you have according to your 12 months data gathering schedule (e.g. for Questions 2.6, 2.8)
- . All options in the questionnaire are based on the data submitted in 2019.
- Please validate the data and make sure that the numbers are correct.

LARGER TEXT

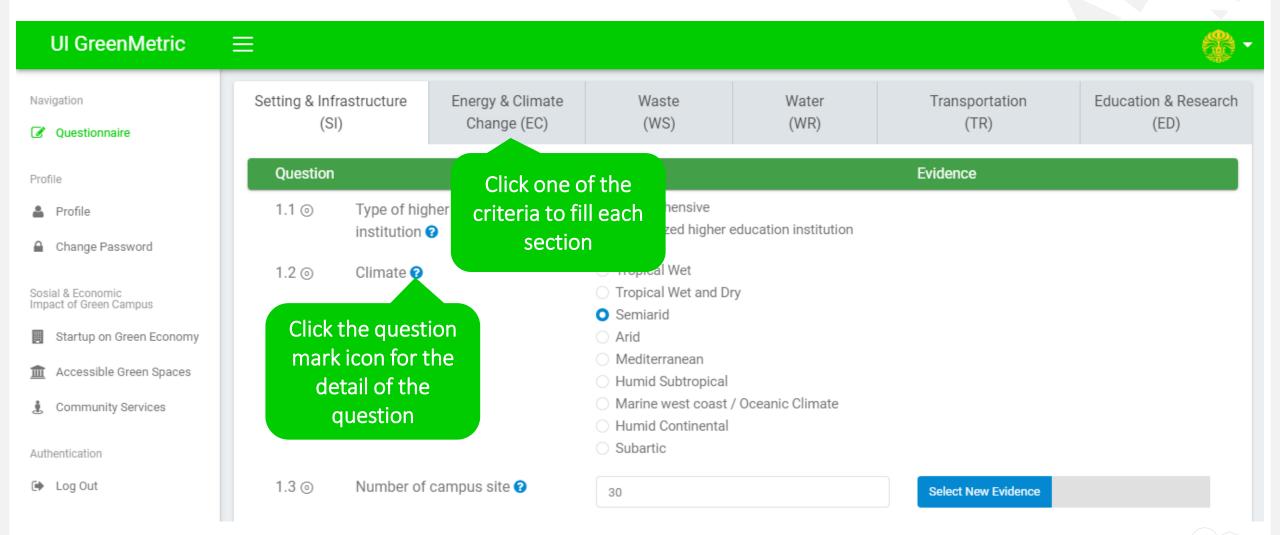


Setting & Infrastructure (SI)

Energy & Climate Change (EC) Waste (WS) Water (WR) Transportation (TR)

Education & Research (ED)

UI GreenMetric Questionnaire Online Questionnaire Page





UI GreenMetric Questionnaire Online Questionnaire Page – Setting and Infrastructure

UI GreenMetric \equiv Tropical Wet Climate ? 1.2 (0) Navigation Tropical Wet and Dry Questionnaire Semiarid Arid Profile Mediterranean Humid Subtropical Profile **Upload** your Marine west coast / Oceanic Climate Change Password Humid Continental evidence. Subartic Sosial & Economic There are two ways to check Impact of Green Campus Number of campus site ? 1.3 (0) Select New Evidence again your uploaded evidence: Startup on Green Economy *document in .doc/.docx/.pdf format. size 2MB. 1. Display uploaded evidence La Display uploaded evidence Accessible Green Spaces 2. Download uploaded ▲ Download uploaded evidence Community Services evidence Evidence template Rural 1.4 (0) Campus setting ? Authentication Download evidence Suburban Log Out Urban template. In city center La Download uploaded evidence High rise building

Evidence template



UI GreenMetric Questionnaire Online Questionnaire – Submit



UI GreenMetric	=			
Navigation			○ 5-10 ○ > 10	
Questionnaire	6.10 (ED.6)	University-run sustainability website	Not available Website in progress or under construction	
Profile	(ED.0)	website 🚱	Website in progress of drider construction Website is available and accessible	
Profile			 Website is available, accessible, and updated occasionally 	
			Website is available, accessible, and updated regularly	
Sosial & Economic Impact of Green Campus	6.11 ⊚	Sustainability website address (URL) if available ?		
Startup on Green Economy				
Accessible Green Spaces	6.12	Sustainability report 🚱	Not available Sustainability report is in preparation	Select Evidence
	(ED.7)		Available but not publicly accessible	*document in .doc/.docx/.pdf format, size 2MB.
L Community Services			Sustainability report is published	Evidence template
Authentication			Sustainability report is published annually	
■ Log Out				
	Terms and 0	Conditions		
		_	ts and updated link of your green website), you a	Click "Save as Sraft" to
	and dissemin	nate the results for ranking purposes	only.	continue filling the data
	data will be	Click "Print Draft	Answer" to print your	
		answers to ask appr	roval from your authority	
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	2020 © UI Green			

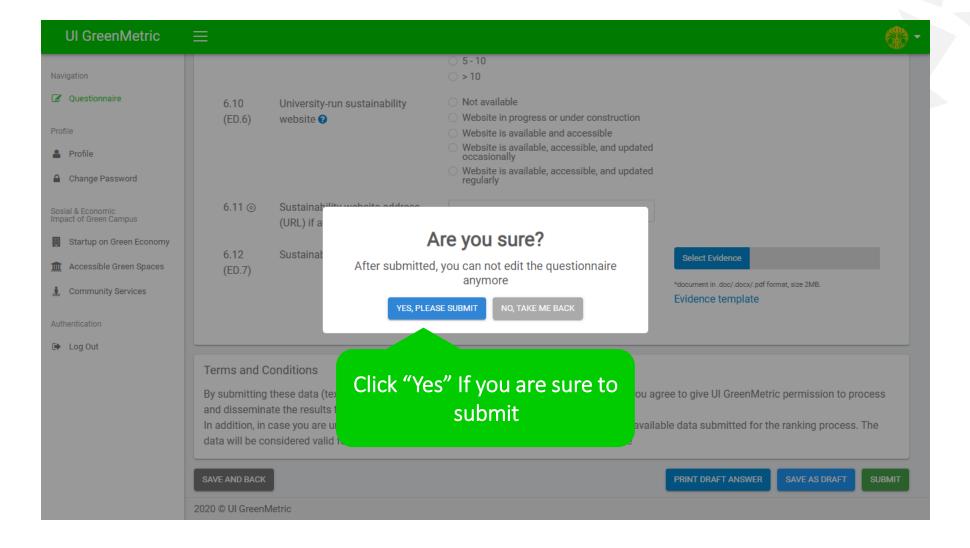
Click "Submit"
to submit
your
questionnaire





UI GreenMetric Questionnaire Online Questionnaire – Submit









How to provide the evidence?

To support your university submission when reviewed by our validators, please observe the following guidance:

- Evidence is mandatory, except for some questions which can be uploaded.
- Lack of evidence may result in declined score.
- All evidence should comply with the template provided in the website link:

https://s.id/UIGMEvidence2020

- Evidence could be pictures, graphs, tables, data, etc.
- Please provide explanation in description section for the pictures submitted.
- Explanation of evidence should be in English.
- For each question provided with evidence the maximum size for evidence is 2 MB (.doc/.docx/.pdf).
- Please note that you agree to provide UI GreenMetric rights to use your data and picture as best practices example and informational purposes.



Put your university's logo here

Fill the data correctly

Evidence could be pictures, graphs, tables, data, etc.

Provide explanation in description section for the pictures submitted.

Add some link for an online evidence

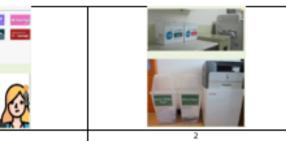
Put your university logo here

Template for Evidence(s) UI GreenMetric Questionnaire

University : ... Country : ...

Web Address
[3] Waste (WS)

[3.2] Program to Reduce the Use of Paper and Plastic on Campus







3

Example of Program to Reduce the Use of Paper and Plastic in Campus (Mahidol University, Thailand)

Description:

(Please describe the program to reduce the use of paper and plastic on your compus. The following is an example of the description. You can describe more related items if needed.)

- Mahidol IT supports paperless system to reduce paper in daily workplace. It can reduce a lot of paper use that mean Mahidol University can reduce CO2 emissions and save the world.
- Solutions of reusable paper in back office, e.g. using 2-side of paper, always recheck your data before print, use online system instead of hard copy.
- Mahidol University has a policy of "Reduce Reuse plastic bag in the last 3 years. We can reduce around 3
 million bags per year or reduce 90% of plastic waste in university".

"Mahidol Reduce & Reuse Plastic Bag" project is consistent with the campaign's key points of United Nations Environment Program (UNEP) this year focused its campaign on "Waste Plastic Pollution" (Beat Plastic Pollution) is the same direction around the world as "if you cannot reuse it, refuse it".

Additional evidence link:





Delete this mark

SAMPLE

How to provide the evidence?

Replace the data with your university's data

Explanation of evidence should be in English.



UI GreenMetric World University Rankings 2020



When is the latest submission?

CALL FOR DATA SUBMISSION

 $\bullet \circ \circ \circ \circ \circ \circ \circ$



UI GreenMetric World University Rankings 2021

Universities, UI GreenMetric, and SDGs in the Time of Pandemic



Data Submission May - 31 October

Validation October - November Results Announcement
December

If you have not received the invitation, please register online at greenmetric.ui.ac.id/registration-page

http://greenmetric.ui.ac.id/



Useful Links

Methodology:

- UI GreenMetric World University Rankings: http://greenmetric.ui.ac.id/methodology-new/#1560220391144-d9fde4ed-d4a8
- UI GreenMetric guideline: http://greenmetric.ui.ac.id/wp-content/uploads/2015/07/UI GreenMetric Guideline 2020 English.pdf
- UI GreenMetric questionnaire: http://greenmetric.ui.ac.id/wp-content/uploads/2015/07/GreenMetric_Questionnaire_2020.pdf
- UI GreenMetric template evidence: http://greenmetric.ui.ac.id/wp-content/uploads/2015/07/UIGM_template_evidence_2020.pdf

Results:

- UI GreenMetric World University Rankings: ht http://greenmetric.ui.ac.id/overall-rankings-2020/
- UI GreenMetric University Rankings by Region: http://greenmetric.ui.ac.id/ranking-by-region-2020/
- UI GreenMetric University Rankings by Country: http://greenmetric.ui.ac.id/ranking-by-country-2020/
- UI GreenMetric University Rankings by Category: http://greenmetric.ui.ac.id/ranking-by-category-2020/

Network:

UI GreenMetric World University Rankings Network: http://greenmetric.ui.ac.id/organization/



Thank You



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www.greenmetric.ui.ac.id





