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#### **Abstract**

This chapter explores the transformative impact of distance education on promoting green campus initiatives in higher education institutions (HEIs). It stresses the pivotal role of traditional distance education institutions in offering flexible learning while pioneering sustainable, environmentally friendly, green practices. Highlighting the comprehensive functions of HEIs—management, education, research, and community involvement—the chapter examines how distance education can significantly reduce carbon emissions and energy consumption compared to traditional methods. A framework is presented to guide HEIs in initiating green campus practices, emphasising a holistic approach that spans management, learning, research, and community engagement, aimed at fostering sustainability. This framework, alongside examples of good practices, offers a roadmap for HEIs to integrate sustainability into their core operations, ultimately contributing to a more sustainable future.

A Ithough distance education has become one of the mainstream delivery modes in higher education owing to many factors, such as technological advancements, social and global movements, diseases, wars, social conflicts, natural disasters, and so forth, traditional distance education institutions still play an important role for offering flexible, lifelong learning opportunities to a large body of learners. They have been models to all institutions not only in introducing innovative, alternative learning opportunities and environments but also in managing an educational institution efficiently, attractively, and sustainably. Sustainable, or, with a closer focus, green campus implementations are also among the exemplary implementations of distance education providers.

According to Velazquez et al. (2006), a sustainable, or green university, is a higher education establishment that adheres to environmentally friendly economic, social, and environmental practices while carrying out its academic duties, conducting research, and engaging with the community in a way that promotes the shift of society toward sustainable lifestyles. As it has been widely accepted, there are four major functions in higher education: management and leadership, learning and education, research and development, and community involvement. Leal Filho et al. (2019) have listed green building, waste management, sustainable procurement, and sustainable mobility as the major areas of greening the management and leadership function. While concerning greening the learning and education function, HE institutions' responsibility is related to increasing their students' awareness of environmental and social issues, and to help them acquire competencies to be used in their daily life and future workplaces (Dagiliūtė et al., 2018). The research and development function is about creating new knowledge and best practices to be used by others on a large scale (Waas et al., 2010). Finally, the community involvement function covers the intensive communication and collaboration with regional and national stakeholders of HEIs on raising awareness, providing learning opportunities, sharing or reflecting new knowledge on greening, as well as modelling and leading green implementations (Sánchez-Barrioluengo & Benneworth, 2019). All in all, it is also the responsibility of HE institutions to be a role model by implementing the green campus practices and vision they advocate for on their own campus.

On the other hand, although there are some other opinions about the role of online and distance education in greening the campuses (e.g., Baker, 2021; Smith, 2023), a distance or technology-based education mode of delivery promises a more sustainable campus than traditional in-person alternatives in all functions of an HEI. For instance, Caird et al. (2015) concluded in their study that the primary causes of carbon

emissions in HEIs were campus operations, home energy use, and mobility. When compared to campus-based modes of delivery, online and distance delivery modes produced significant carbon savings of 83 percent and lowered energy use by 88 percent. Although there were possible rebound effects linked to increasing ICT-related energy consumption and paper needed for printing, the online and distance education approach achieved the lowest energy consumption and carbon emissions. Schroeder (2022, August 2), in a blog post, suggested that online and distance education may help HEIs reduce their carbon footprint in several ways, such as less frequent commuting to campus among learners, academic and administrative staff, not producing and consuming paper handouts rather using digital versions, not using on-campus heating, air conditioning, lighting, water, sewer and associated facilities, etc. Distance education institutions have been using these ways for many years and can be considered as models for other HEIs in their green campus transition.

The following sections of the report first present a framework to help leaders of HEIs think on several important issues while initiating a green campus initiative and then offer good practices of the partner distance education institutions regarding green campus that can be used by any other HEI.

# Framework

There are many frameworks that have been used to assess organizations about their extent of supporting sustainability and/or greening. The European Eco-Management and Audit Scheme (EMAS), Leadership in Energy and Environmental Design (LEED), Building Research Establishment Environmental Assessment Program (BREEAM), Campus Sustainability Assessment Framework (CSAF), Green League, Environmental and Social Responsibility (ESR), Index 2009, and GreenMetric are among the most cited ones. Our goal in this section is not to propose a new framework for transitioning to a green campus but rather a way of systemic (not systematic) thinking for those leaders or members of HEIs to use while they plan to initiate green campus practices.

There are several dimensions of this framework: (i) the functions of a HEI, (ii) the scope of greening (or sustainability), and (iii) the process of green transition. The first dimension is about the major functions of HEIs, namely management and leadership, learning and education, research and development, and community involvement. A great deal of initiatives mainly focusses on management and leadership functions, and some others focus on other dimensions. Although it is not easy, this paper emphasises the need for a holistic approach for a greener campus and tries to develop various practices in all functions of the HEI. Green campus initiatives such as sustainable buildings, energy efficiency, waste management and recycling, carbon footprint reduction, etc. must be considered under each function. For instance, let's say the leadership in an institution has started an initiative targeting energy efficiency in its buildings. This is a managerial initiative. In order to increase its success, this initiative should be supported with, for example, an educational initiative to increase awareness of energy efficiency among all major stakeholders of the institution (students, academic and administrative staff), and/or with a declaration of "energy-efficient campus" as one of the priority research and development areas of the institution.

The second dimension is related to the scope of greening. For a comprehensive and inclusive initiative, an institution should have policies, plans, practices (activities), evaluation and monitoring, as well as

dissemination and transfer plans. The institution should have policies that cover its goals and SMART objectives and detailed plans to achieve them under every function, if possible. The practices should also address the goals and objectives. This structure helps the institutions monitor and evaluate their initiatives. In other words, evaluation and monitoring are the major components of any green campus initiative. The institutions should also develop plans for dissemination of the results of their initiatives to wider audiences starting from the main stakeholders (students, academic and administrative staff) to regional and national ones. They should be able to transfer their intellectual and physical outcomes to all possible future initiatives.

The last dimension is about the process of green transition or systematic problem-solving approach within the systemic framework. After diagnosing the problematic areas, the institutions should conduct analyses to develop a deep understanding of the sources and impact of these problems. In the scope of this chapter, the concept of "problem" means a "need", or "need to be transformed" rather than negative results, implementations, etc. After learning more about the problem (need), the institutions should make detailed solution plans (actions) in the scope of their policies and implement them iteratively. During those iterations, monitoring, and improvements are also essential tasks to be completed. Once again, it should be noted that this three-dimensional framework is just a recommended way of thinking about developing practices in a green campus transition.

# Case studies and reflections from the field

While this section provides a framework, open universities may adopt different Green Campus pathways due to different future strategies, missions and visions, as well as social, economic, cultural or regulatory reasons. In fact, although they are institutions, open universities have a collective personality and the attitudes of different stakeholders, from students to educators, administrators and staff, help to shape this personality. In this context, the green campus strategies of two important open universities, Anadolu University and Open University UK, can be taken as case studies.

Anadolu University addresses the challenge of implementing macro-level policies on an individual scale by developing personalized engagement strategies tailored to its vast student population. The university champions sustainability through significant green campus initiatives, such as zero-waste policies that have eliminated single-use materials in cafeterias, preventing millions of pieces of plastic and paper waste annually. Digital transitions further contribute to waste reduction, exemplified by the issuance of digital diplomas and optimized exam sessions, which cut carbon footprints, save numerous trees, and reduce CO2 emissions. An awareness campaign educates the university community about these sustainability practices. These efforts have earned Anadolu University recognition in the GreenMetric Index and underscored its alignment with Sustainable Development Goals (SDGs) according to Web of Science classifications. While these initiatives highlight Anadolu University's dedication to sustainability, there is an ongoing need to prioritize goals and strengthen incentive mechanisms to achieve a wider impact.

The Open University (OU) in the UK has implemented extensive carbon reduction measures to meet government targets, engaging all staff in sustainable procurement, transport, and ICT policies. Significant

improvements include enhanced building insulation, efficient heating systems, and reduced electricity consumption through LED lighting and renewable technologies like photovoltaic roofing.

A key focus of OU's sustainability efforts is understanding the environmental impacts of different higher education delivery systems. The Factor 10 Visions study revealed that distance education at the OU consumes nearly 90% less energy and produces 85% fewer CO2 emissions than traditional campus-based education, mainly due to reduced student travel, efficient campus site utilization, and decreased energy use for student housing.

In response to the increasing use of ICT in education, the SusTEACH project assessed the carbon impacts of various teaching models, finding that ICT-enhanced and traditional distance teaching methods significantly reduce energy consumption and carbon emissions. The project highlighted that ICT usage accounts for a substantial portion of energy consumption and CO2 emissions in module delivery. It also noted that despite the rise of digital learning, paper consumption remains consistent, suggesting students prefer printed materials for study.

The OU has also prioritized sustainability within its institutional strategy, setting ambitious goals in its Net Zero Carbon Policy and Plan 2030. Efforts include training staff and students in carbon literacy, launching sustainability planning tools, and improving campus operations to reduce greenhouse gas emissions. Collaborative initiatives extend across the four UK nations, promoting sustainability education and practices within the university community.

The OU emphasises its role as an educator in driving sustainability, integrating it into curricula, research, and public engagement. This commitment includes aligning research with the United Nations Sustainable Development Goals (SDGs), supporting learners and communities in transitioning to a renewable energy economy, and embedding sustainability in all aspects of the university's operations and teachings.

This comparative evaluation explores the green campus policies of Anadolu University and The Open University (OU) in the UK, applying the framework of major functions of higher education: management and leadership, learning and education, research and development, and community involvement. Both institutions demonstrate significant efforts in promoting sustainability, yet their approaches and achievements provide a rich ground for comparison.

Anadolu University demonstrates excellence in waste management, digital transitions, and community engagement through awareness campaigns. The Open University leads in carbon reduction, sustainable procurement, curriculum integration, detailed research on educational impacts, and broad public engagement. These complementary strategies highlight diverse pathways for higher education institutions to achieve sustainable campuses. Anadolu's focus on zero waste and digitalization contrasts with OU's comprehensive carbon reduction and educational integration, offering valuable insights and models for other institutions aiming to implement or enhance green campus policies.

#### References

Baker, S. (2019, February 18). *Online learning not a green panacea, researchers warn*. Times Higher Efucation.https://www.timeshighereducation.com/news/online-learning-not-green-panacea-researchers-warn

Caird, S., Lane, A., Swithenby, E., Roy, R., & Potter, S. (2015). Design of higher education teaching models and carbon impacts. *International Journal of Sustainability in Higher Education*, *16*(1), 96-111. https://doi.org/10.1108/ijshe-06-2013-0065

Dagiliūtė, R., Liobikienė, G., & Minelgaitė, A. (2018). Sustainability at universities: students' perceptions from green and non-green universities. *Journal of Cleaner Production*, 181, 473-482. https://doi.org/10.1016/j.jclepro.2018.01.213

Leal Filho, W., Skanavis, C., Kounani, A., Brandli, L. L., Shiel, C., do Paco, A., ... & Shula, K. (2019). The role of planning in implementing sustainable development in a higher education context. *Journal of Cleaner Production*, 235, 678-687. https://doi.org/10.1016/j.jclepro.2019.06.322

Sánchez-Barrioluengo, M., & Benneworth, P. (2019). Is the entrepreneurial university also regionally engaged? Analysing the influence of university's structural configuration on third mission performance. *Technological Forecasting and Social Change, 141,* 206-218. https://doi.org/10.1016/j.techfore.2018.10.017

Schroeder, R. (2022, August 2). Online Learning Impacting the Carbon Footprint. Blog Post. Retrieved at: https://www.insidehighered.com/digital-learning/blogs/online-trending-now/online-learning-impacting-carbon-footprint

Smith, G. R. (2004). How green is technology? The paradox of online sustainable education. *International Journal of Sustainable Development & World Ecology, 11*(3), 262-270. https://doi.org/10.1080/13504500409469830

Velazquez, L., Munguia, N., Platt, A., & Taddei, J. (2006). Sustainable university: what can be the matter? *Journal of Cleaner Production*, *14*(9-11), 810-819. https://doi.org/10.1016/j.jclepro.2005.12.008

Waas, T., Verbruggen, A., & Wright, T. (2010). University research for sustainable development: definition and characteristics explored. *Journal of Cleaner Production*, 18(7), 629-636. https://doi.org/10.1016/j.jclepro.2009.09.017

## **Good Practices**

Good Practice #1

The Open University in the United Kingdom: Past, present, and future green institutional phases

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The Open University | United Kingdom

The Open University in the United Kingdom has taught and researched sustainability in its many guises since its foundation in 1969. It has also sought to follow appropriate legislation and regulations relating to sustainability that apply to the University as an educational organization and business. Most of these actions covered the many and diverse operations of the university including it distributed estate around the four nations of the UK. For example, the Climate Change Act 2008 required universities, directly or indirectly, to take action to reduce carbon emissions to contribute to the national targets for carbon reduction. More recently it has explicitly included Sustainability as one of five goals in its Learn and Live Strategy 2022-26 whereby it is taking a whole institution approach to embedding sustainability within everything it does and all the people it employs and engages with as an educational organization and business.

#### Introduction

The Open University in the United Kingdom was established in 1969. Moving from the original concept of the "University of the Air" to the University of the Cloud, the OU is as relevant tomorrow as it was in 1969 – however, our founding principles continue to drive everything that we do – to be open to people, places, methods and ideas. We promote educational opportunity and social justice by providing high-quality university education to all who wish to realise their ambitions and fulfil their potential. Through academic research, pedagogic innovation and collaborative partnership we seek to be a world leader in the design, content and delivery of supported open learning. Most of our undergraduate courses have no formal entry requirements. We believe that the qualifications our students have when they leave are the only ones that matter. Operating under the differing funding and administrative arrangements in the four nations of the UK, we work in partnership with national and local organisations to open up higher education to underrepresented groups, reaching out to potential students in their communities – and ensuring that, once on board, these students receive the support they need to succeed in their studies. Every day, millions of people access free OU content, no matter where they live in the world, whether that be educational materials through OpenLearn and YouTube or research papers through Open Research Online and CORE.

## Challenges: Putting into practice

The biggest challenge is bringing together the many strands of activities and people involved in managing teaching, student support, research, community engagement, employer engagement, international development across a distributed estate and workforce throughout the United Kingdom. These activities and people use renewable and non-renewable resources and create waste products both directly within

that estate and indirectly through the upstream suppliers of resources and services as well as the downstream beneficiaries of its activities.

Approaches: The first fifty years

#### **Environmental teaching**

Ever since it started teaching students in 1971 The Open University has had several modules and latterly qualifications with environment, environmental or sustainability in their title. It also has had several modules and qualifications ostensibly about other subjects that include a defined but minor component that deals with an aspect of environmental sustainability. Lastly the University has its unique Open qualifications through which students can choose, within defined regulations, their own profile of modules from across the Open University's undergraduate and postgraduate curriculum. Some of these profiles will feature an environmental module. Nevertheless, only about 3% of our 170,000 students study one of these modules in any given year. In addition to its credit bearing curriculum The Open University also offers a small number of non-accredited courses and a much larger number of free courses and other educational resources via its OpenLearn platform. Most of these free courses are derived from credit bearing modules but some free courses and most other short form, rich media educational resources are made especially for OpenLearn or other channels such as YouTube. The annual audience for environment related courses and other content on these channels is in the hundreds of thousands.

#### **Environmental research**

In a similar vein there have always been academic staff that have researched different environmental topics about aspects of the world around us including those close to home. Two examples relevant to green campus are research projects on the carbon impacts of distance and online teaching models (Factor10 and SusTEACH) and a project about using digital technologies in urban settings called MK:Smart.

The first major study to assess the energy consumption and carbon impacts of campus-based and distance higher education systems was the Factor 10 Visions study 'Towards Sustainable Higher Education' (Roy et al, 2005). The study found that on average the production and delivery of distance teaching consumed nearly 90% less energy and produced 85% fewer CO2 emissions than campus-based higher education courses and modules. The much lower impacts of distance education were found to be mainly due to a major reduction in the amount of student travel, economies of scale in utilization of the campus site, and the elimination of much of the energy consumption associated with students' housing'. The greater use of online teaching models since then required further analysis of carbon impacts against the more traditional face-to-face and distance teaching models. This led to the SusTEACH project which examined the role of ICTs in Higher Education and their effect on carbon reduction across 30 courses and modules in several UK institutions. As with the Factor 10 study, SusTEACH found that the main sources of carbon impacts were associated with travel, residential energy consumption and campus site operations (Caird et al, 2015). However, the use of online and ICT enhanced teaching delivery methods and traditional distance teaching methods reduced these sources of energy consumption and therefore achieved significant carbon reductions. Building on the findings, a SusTEACH toolkit, was designed to support the planning of more sustainable courses, modules and qualification programmes that is incorporated into a free course on 'The environmental impact of teaching and learning' on OpenLearn.

Milton Keynes, where the OU has its main campus, has been a leading UK Smart City since 2014, when the successful three-year MK:Smart programme was launched. This highly influential initiative shaped the smart city agenda not just in Milton Keynes but at an international level, and established Milton Keynes as one of the leading smart cities in the world. The comprehensive research and development programme includes much involvement of researchers from The Open University across a numberer of projects. Two projects dealing with sustainability include GreenDATA, a project to capture, store and share power generation and use data from domestic renewable energy installations, including solar, wind and solar/geothermal sources, and iSpot Nature, a citizen science platform for biodiversity run by The Open University to help anyone learn about and engage with nature, building their wildlife identification skills, while sharing, recording and identifying species. Such developments are now linked to an institution wide Open Societal Challenges platform that cover over 200 projects dealing variously with sustainability, living well, and tackling inequality, with nearly 70 of the projects being solely or partly about sustainability. There is also an Open Societal Challenges Competition open to UK charities and Milton Keynes businesses.

# **Environmental impacts of operations**

Universities have always been subject to the same environmental legislation and regulations as other businesses in the UK. However, the Climate Change Act 2008 required universities, directly or indirectly, to take action to reduce carbon emissions to contribute to the national targets for carbon reduction. Since then, The Open University has devised plans for how to reduce, measure, review and report progress on its emissions as evidenced by its Net Zero Carbon Policy and Net Zero Carbon Plan 2030. At the same time, The Open University has been developing a specific Environmental Sustainability Policy but also a set of more specific policies on different aspects of its operations: sustainable construction, biodiversity, waste, water, heating and cooling, sustainable food and procurement. For many of these operations (e.g., energy, emissions and waste, transport, and environment) the university has had to report its data to the Higher Education Statistics Agency which is then published annually alongside similar data from almost all universities.

Since 2010 the University had gradually developed many aspects of a green campus, responding to both internal and external pressures, but much of this activity was left to dedicated staff and without a defined strategy. In 2021, partly in response to wider developments in the UK promoted by the Alliance for Sustainability Leadership in Education (EAUC) and the activities of both The Open University's own students and students nationally through Students Organising for Sustainability UK and partly in response to consultations with staff The Open University explicitly included Sustainability as one of five goals in its Learn and Live Strategy 2022-26 (The Open University, 2022).

#### Approaches: The present day

Our delivery of sustainability firmly draws on our unique characteristics: our pioneering provision of distance learning; our mass public engagement reach, often in partnership with the BBC; and our fournations presence. We build on our long-standing social justice mission to enable environmental justice.

Our VCE sponsor for sustainability, the Executive Dean of STEM, and our Director of Sustainability, direct, coordinate and empower a matrix-team of senior colleagues to deliver on sustainability.

Our approach emphasises that **sustainability is 'everyone's job'** and we involve our staff and students in collaborative projects to integrate sustainability in all that we do and have a website dedicated to explaining all aspect of sustainability work at The OU (The Open University, 2024). In the academic year 2022-23, we:

- Upskilled and reskilled close to 700 of our staff and students through our free 8-hour Carbon Literacy training, with half becoming Carbon Literacy Project certified.
- Launched our co-produced Sustainability Planning, Action and Reporting Kit (SPARK) for units/subunits. It enables teams to tailor actions, be creative in embedding sustainability in their daily work and form sustainability working groups for continuous improvement and impact prioritisation.
- Empowered our pan-OU Sustainability Coordination Group and our Sustainability Steering Group (a subset of VCE) in monthly briefings and meetings.
- Learned from best practice across the four nations, establishing a nations sustainability working group. We transferred good practice in Scotland to input into consultations in Northern Ireland and develop an institutional adaptation policy. We joined a group of all nine universities in Wales pioneering a collaborative Masters in Sustainability Leadership and are members of the Wales Innovation Network Net Zero steering group.

Institutional progress on our sustainability commitments means we had:

- Continued to reduce our greenhouse gas emissions from our energy use ('Scope 1 and 2') including building fabric upgrades, winter closures, server rationalisation, laboratory improvements and Electric Vehicle charging point installation for fleet.
- Collated data on emissions from procurement of goods and services ('Scope 3') including high spend/high carbon digital and travel.
- Trained our Central Procurement team to embed carbon reduction, sustainability and modern slavery prevention in procurement processes.
- Created internal guidance on responsible procurement for all buyers of goods and services, encouraging reuse wherever possible via our reuse portal (Warp-It).
- Made progress on completing our divestment from fossil fuels by the end of 2023.
- Drafted a Climate Risk Plan and processes ahead of Climate Risk Disclosure requirements in 2024.
- Left much of our Milton Keynes campus unmown to enhance biodiversity and support wildlife, whilst still being part of Britain in Bloom.
- Continued communications to all staff and students in a monthly sustainability bulletin, a 600+ Viva Engage community and monthly Go Green staff champion events.
- Led multi-stakeholder discussions on sustainability and green skills through our Open Conversations and 'Net Zero Skills and the Role of Universities' public event, bringing together the OU family of students, graduates and professors.
- Collaborated with Students Organising for Sustainability (SOS-UK) on inclusive and equitable sustainability, acknowledging the intersectionality with EDI.

## Approaches: The future

We are committed to further embedding sustainability in our curriculum, research, and knowledge exchange activities. We aim to support our learners, their families, communities, and organisations to transition to a renewable energy economy, building long-term resilience and adapting to climate change impacts. To do so we have:

- Aligned our most recent Research Plan (2022–27) with the United Nations Sustainable Development Goals (SDGs) and welcomed UKRI's draft Sustainability Concordat.
- Embedded sustainability in our offer to public sector, business and enterprise by promoting our popular Microcredential 'Climate Change: Transforming your Organisation for Sustainability' and initiating an 'Environmental, Social and Governance' (ESG) campaign to highlight our commitment to sustainable business.
- Trained 13 of our careers service staff on climate and green careers to ensure our students receive advice and support on jobs in sustainability and net zero.
- Engaged 90 students to map all OU modules against the SDGs and UNESCO 21st century competencies to inform curriculum design and course revalidation.
- Developed guidance for module writers so that our students are encouraged to think about sustainability whatever they study.
- Reviewed Professional Statutory and Regulatory Bodies accrediting processes which support sustainability and collaborated with the Alliance for Sustainability Leadership in Education (EAUC) on enhanced engagement and guidance.

#### **Outcomes: External reporting**

It is important to monitor and evaluate our actions against both internal and external benchmarks as we continue to implement our institutional strategy. The annual reporting on Estates led activities has already been noted but we are also subject to other external evaluations. One that has run in the UK for many years is the student led People and Planet University League Table, and in 2023-24 the Open University was ranked 67 out of 151 universities but this was up 48 places from the previous year. So, an average but improving performance on the metrics used for these league tables. Also, in 2023 we published our UN Global Compact Communication on Engagement (The Open University, 2023) that includes a CEO statement of continued support for the UN Global Compact and its ten principles- as well as a measurement of outcomes against those principles.

## References

Caird, S., Lane, A., Swithenby, E., Roy, R. and Potter, S. (2015) Design of higher education teaching models and carbon impacts, *International Journal of Sustainability in Higher Education*, Vol. 16: 1, pp.96 – 111

The Open University (2022) Learn and Live, The Open University's strategy for 2022-27, available at https://about.open.ac.uk/strategy

The Open University (2023) OU 2023 Communication on Engagement with the United Nations Global Compact, available at https://unglobalcompact.org/participation/report/cop/detail/480450

The Open University (2024) Sustainability at The Open University, available at https://www5.open.ac.uk/sustainability/

Roy, R., Potter, S., Yarrow, K. & Smith, M. (2005). Factor 10 visions project: towards sustainable higher education: environmental impacts of campus-based and distance higher education systems, final report DIG-08, Milton Keynes: Open University, Design Innovation Group, March, available at https://oro.open.ac.uk/39751/7/DIG08.pdf

#### Good Practice #2

# Anadolu University: Initiatives to Form a Sustainable Learning Ecosystem

# Aras Bozkurt & Cengiz Hakan Aydın Anadolu University | Türkiye

Anadolu University tackles the challenge of implementing macro-level policies on an individual scale, especially given its vast student population, by developing personalized engagement strategies. The university champions sustainability through significant green campus-oriented initiatives, such as zero-waste policies that have eliminated single-use materials in cafeterias, averting millions of pieces of plastic and paper waste annually. Digital transitions further reduce paper waste, exemplified by the issuance of digital diplomas, and optimising exam sessions to cut carbon footprints, saving numerous trees and reducing CO2 emissions. An awareness campaign educates the university community about these sustainability practices. These actions have earned Anadolu University recognition in the GreenMetric Index and underscored its alignment with Sustainable Development Goals (SDGs) as per Web of Science classifications. While these initiatives mark Anadolu University's dedication to sustainability, there is an ongoing need to prioritize goals and strengthen incentive mechanisms for a wider impact.

#### Introduction

Anadolu University, established in 1958 as a state university in Türkiye, embarked on a transformative journey in 1982 by adopting open and distance learning (ODL) methodologies. This strategic shift enabled the university to function as a dual-mode institution, catering to the educational needs of both on-campus and remote learners. The adoption of ODL was driven by a principal objective: to ensure educational equality and create a learning ecosystem with different entry and exit points. Anchoring this initiative was the philosophy of openness, which has since become central to the university's operational ethos. Anadolu University envisions itself as a global leader in lifelong learning, a vision highlighting its commitment to openness and educational innovation.

#### Challenges: Putting into practice

The biggest challenge of the practices carried out by Anadolu University is that the policies implemented at the macro level as an institution are reduced to individuals at the micro level. Although efforts are being made in this direction, the size of the student body in particular makes it difficult to reach wider audiences and points to the need to adopt different approaches for micro-strategies at the individual level.

#### Approaches: Sustainability and Green Campus-oriented projects

Anadolu University, which carries out activities in all social responsibility areas for the benefit of society, works with the theme of a Sustainable Campus by considering the future of our world and humanity. Anadolu University, which has implemented a series of practices within the scope of zero waste for sustainability and a green future, produces projects with an approach that prioritizes the needs of society.

**Zero-Waste Policy:** In line with the Sustainable Campus goal, the practice of using single-use materials in cafeterias was terminated in order to prevent waste and reduce the amount of waste generated. Plastic waste, which disappears in nature between 400 and 1000 years, but the effect of harmful chemicals released into the soil and water while dissolving continues much longer, has been removed from use. With this practice, Anadolu University has prevented more than 2.6 million plastic cups, more than 1.6 million dinner sets, more than 25 thousand oversized garbage bags, and tons of paper and plastic waste from being left to nature every year.

Paper-Waste Policy: In addition to the sustainability practices previously implemented in all units of Anadolu University, no printed material that is not compulsory will be used to prevent paper waste. In this context, the distribution of all materials such as posters, invitations, brochures, booklets, etc. will now be carried out in digital environments. On the other hand, unnecessary paper use has been minimized with the electronic document system. With the issuance of digital diplomas to students graduating from the open education system, the issuance of approximately 150-200 thousand printed diplomas each year has been eliminated. This project has resulted in significant paper savings.

Carbon-Footprint Policy: Systematic activities are carried out to reduce or not use activities that may harm the environment in Open Education System exams, which are held with intense participation. With the institutional processes carried out in this context, less paper is used, fewer products and services are implemented, contributing to the protection and development of natural life. While the number of exam sessions was 4 in 2021-2022 Fall Semester, this number was reduced to 3 sessions in the 2023-2024 Fall Semester. Anadolu University has thus managed to make a great improvement in terms of carbon footprint. With the savings achieved, 2140 trees were prevented from being cut down for each exam period, more than 5 tons of waste plastic was not released into nature, and thousands of tons of CO2 were prevented from being released into nature with the reduced need for transportation.

**Awareness Policy:** Having trained 700 staff on awareness raising, Anadolu University plans to train all employees and students in the new semester. In this context, the Zero Waste Student Club, which will start its activities in the new semester, plans to organize a series of activities to raise awareness of the whole society, especially students.

## Outcomes: State of the art

According to GreenMetric Indexes (GreenMetric, 2023), Anadolu University ranked 885th university with its total score (Figure 2.1). Besides, if we benchmark the practices of Anadolu University related to Sustainable Development Goals (UN, 2015) based on Web of Science classifications (WoS) based on publications indexed by WoS (2024), we can see that (Figure 2.2), in order of intensity of interest, SDG No 11, 07, 06, 13, 12 and 14 addresses in Anadolu University affiliated publications.

Current practices at Anadolu University have prioritized projects aimed at reducing unnecessary waste generation. Awareness projects aim to ensure that existing practices are adopted by Anadolu University and become part of the institutional culture. However, when the GreenMetric and WoS SDG results are examined, it is thought that goals should be prioritized, especially in the context of Green Campus, and incentive mechanisms should be put in place to increase the realization of these goals.

Rank 2023 ↑↓	University ↑↓	Country ↑↓	Total Score ↑↓	Setting &  Infrastructure	Energy & Climate Change	Waste ↑↓	Water ↑↓	Transportation ↑↓	Education & Research ↑↓	
885	Anadolu University	Turkiye	4430	820	845	1275	350	625	515	

Figure 2.1. GreenMetric Anadolu University rankings.

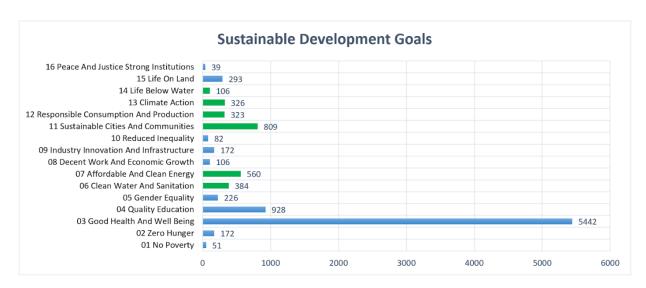


Figure 2.2. Distribution of WoS SDG classification.

# References

Aydın, C. H., Uçar, H., Koçdar, S., Okur, R., Taşcı, D., & Bozkurt, A. (2023). Reflections and Transformations in an Open University. 2023 AECT International Convention: AECT 100: Reflections and Transformations. October 15–19, 2023, Orlando, Florida, USA & Virtual.

GreenMetric. (2023). Overall Rankings 2023. https://greenmetric.ui.ac.id/rankings/overall-rankings-2023

UN. (2015). Sustainable Development Goals-SDG.

https://www.un.org/sustainabledevelopment/education/

WoS. (2024). About Us. Clarivate. https://clarivate.com/about-us/

Chapter 6 | Division of Tasks and Responsibilities