2022
Sustainability Report
SDG 7

AFFORABLE AND CLEAN ENERGY

EGE UNIVERSITY

LETTER FROM THE REPORT RECTOR

Ege University is a leading university, an example of the Turkish higher education system, which has received Turkey's first Institutional Full Accreditation Certificate and has the identity of a Student-Focused Research University.

Our University, with its 68-year deep-rooted history, strong academic staff, qualified scientific studies, distinguished students, and graduates, is to make a supreme effort to build a solid future for new generations by being sensitive to the realities of the world, our country and the society we live in. Ege University is a strong research institution with an entrepreneurship and innovation ecosystem where R&D, innovation, knowledge, and technology transfer take place between industry and university.

Ege University has adopted all the goals of eliminating inequalities, strengthening economic growth and employment, improving cities and residential areas, ensuring industrialization, protecting oceans and ecosystems, producing and consuming energy more sustainably, combating climate change, developing sustainable production and consumption, and empowering human rights. Our university operates within an adequate ultrastructure designable to implement all academic and operational activities within the SDGs framework.

We steadfastly persist in our pursuit of elevating Ege University into a vanguard research institution dedicated to pioneering technological advancements in support of sustainable development.

This report not only contains in-depth information about Ege University's remarkable efforts in each of the United Nations Sustainable Development Goals throughout 2022 but also reveals the key strategies of our institution. Moreover, it serves as a guiding compass, not only illuminating our efforts but also enabling a keener determination of our evolving needs and strategic plans.

In harmonious unity, we ardently endeavor to steer our institution towards a guiding and pioneering role by meticulously realizing our objectives through a management philosophy of fairness, equity, and accessibility.

I appreciate all my esteemed colleagues whose collective efforts have shaped this report.

With warm regards and respect…"

Prof. Dr. Necdet BUDAK
Rector

LETTER FROM THE REPORT TEAM

As the Sustainability Report Team, Ege University, we are proud and excited to present the third annual Sustainability Report of Ege University, one of Turkey's pioneering universities, prepared to concretize the University's commitment to sustainability and enable you to follow our sustainability-related efforts closely.

Sustainability lies at the heart of Ege University's main objectives. Besides, our university bears the responsibility of leaving a more livable world to future generations, and it emphasizes its determination to integrate sustainability principles in the fields of education, research, social contribution, and campus management. Over the years, Ege University has built a strong track record of offering sustainable solutions to address the challenges facing the university and society. In 2020, all these efforts culminated in establishing the Rankings Office. This move not only strengthened the university's commitment to sustainability but also led to the formation of sub-commissions focusing on various Sustainable Development Goals. These sub-working groups brought together academics and administrative staff from every faculty and the Rectorate, each contributing diverse perspectives and professional expertise.

What makes the Rankings Office even more dynamic is its inclusion of the Sustainability Report Team, which actively participates in all activities, thus enhancing the visibility of the office across the university.

Ege University aims to extend influence far beyond the boundaries of our institution. The EGE Sustainability Team seeks to be a trailblazer in instilling a culture of sustainability in other higher education institutions. Our Sustainability Team and its sub-working groups are going to serve as advisors to our university as well as to other universities, offering insights into Sustainable Development Goals and impact management. Furthermore, we are going to continue to be actively involved in educational initiatives that support schools on their sustainability journeys.

Beyond our campuses, we actively engage with local communities, businesses, and government entities to foster sustainable relationships, collaborate on solving common issues, and share our wealth of knowledge.

Ege University is unwavering in its commitment to the responsible management of resources to mitigate their impact on society, the environment, and the economy. This report offers a transparent and current source of information, providing valuable guidance to universities and stakeholders seeking to expand their knowledge on sustainability.

EGE University is actively dedicated to advancing sustainability through research, education, and innovation to become a leading institution in Turkey and worldwide. Our primary focus is on enhancing the accessibility, inclusivity, and affordability of our university for the benefit of our community. We cultivate positive partnerships with industry leaders to strengthen our engagement and ensure the use of environmentally sustainable practices that support innovation and research.
This report offers insight into EGE UNI's position in 2022 regarding enhancing sustainability in Turkey. We share our initiatives and commitments related to environmental, social, and economic sustainability, along with their corresponding impacts. We extend our gratitude to our sub-working groups, the Sustainability Report team, our dedicated students, EGE's esteemed academicians, and the Rectorate for their unwavering efforts this year to further our sustainable impact.

Our journey towards securing the sustainability of our world is an extensive and long way one. As the EGE Sustainability Team, we place our trust in the dedication of our university's staff and students to continue their improvements this year and sustain their endeavors well into the future.

We appreciate your interest in the Ege University Sustainability Report and eagerly welcome the feedback of our readers.

Assoc. Prof. Göknur ŞİŞMAN AYDIN

Coordinator of Sustainability Studies
Office of Institutional Development
Planning and Monitoring

AFFORABLE AND CLEAN ENERGY

The United Nations Sustainable Development Goals (SDGs) provide a vital roadmap for humanity, aiming to achieve a sustainable future worldwide. The seventh of these goals, " Affordable and Clean Energy", is of great environmental and social importance globally.

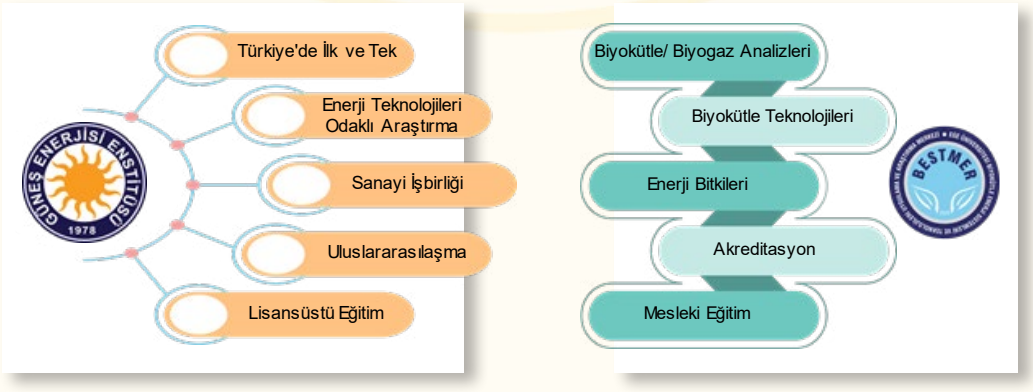
Ege University strongly emphasizes access to clean and accessible energy in its academic research, projects, social contributions and educational activities. As an institution, it prioritizes using renewable resources and energy efficiency.

The goal of "Affordable and Clean Energy" plays a critical role in meeting the energy needs of the modern world and at the same time addressing major environmental challenges such as climate change. The overuse of traditional fossil fuel sources leads to the release of greenhouse gases into the atmosphere and global threats such as climate change. Therefore, the development and utilization of clean energy sources is of paramount importance from both an environmental and economic perspective.

The goal of achieving affordable and clean energy aims to ensure sustainable use of energy resources and access to energy for all. This is a critical step to reduce energy poverty and support economic development in developing countries. At the same time, the use of clean energy sources can improve air quality and reduce health problems by replacing fossil fuels. Affordable and clean energy also presents a huge opportunity for business. Renewable energy technologies create green business opportunities, while energy efficiency measures can reduce costs for businesses. This contributes to building a more sustainable and competitive economy in the long run. In conclusion, the goal of "Affordable and Clean Energy" is vital for the future of the world. Promoting clean energy and increasing access to energy are important steps in combating climate change and supporting global development. Achieving this goal will not only protect our environment, but also help us build a more just and sustainable world.

RESEARCH AND TRAINING

Ege University contributes to sustainable energy solutions by conducting innovative research on clean energy production and energy efficiency within the framework of Sustainable Development Goals. Many departments of the university are working on more efficient and effective use of energy resources. However, there are two units, the Solar Energy Institute and the Biomass Energy Systems and Technologies Applications and Research Center (BESTMER), which carry out national and international R&D activities directly on the development of renewable energy resources, energy efficiency, energy storage and energy policy development. Both units, since their establishment, have been engaged in many noteworthy activities at national and international level on the dissemination of renewable energy resources, and there is also a Solar Energy Department under the Solar Energy Institute, which provides graduate level education focused on renewable energy resources. In addition, there are many energy-themed programs in various faculties and colleges.



Energy is one of the 5 thematic areas identified in Ege University's "2019-2023 Strategic Plan". In addition, Energy is presented in relation to other priority areas within the YÖK priority areas and TÜBİTAK 2022-2023 R&D and Innovation Topics. All faculties, institutes and research centers within Ege University pay special attention to this issue in their research activities.

245
Yayın

220 SCI+ ESCI Yayın*
72 Uluslararası İşbirlikli Yayın
(SCI+ESCI'lerin %32,8)

53 Ulusal ve Uluslararası Proje

Ege Üniversitesi'nde bulunan bütün eğitim programları içerisinde;

- **13 ön lisans**
- **6 lisans**
- **24 yüksek lisans**
- **18 doktora**

programı enerji konusu ile doğrudan veya yüksek oranda ilintilidir.

Üniversite genelinde ise verilen;

- **57 ön lisans**
- **145 lisans**
- **192 lisansüstü** (doktora ve yüksek lisans)

ders, içeriğinde enerji konusunu barındırmaktadır veya doğrudan enerji başlığına sahiptir.

2018-2022 Yılları arasında enerji konusunda;
- **94 yüksek lisans**
- **42 doktora**

tezi tamamlanmıştır.

Contributing to Land Degradation Neutrality (LDN) Target Setting by Demonstrating the LDN Approach in the Upper Sakarya Basin for Scaling up at National Level

As an active participant in sustainable land management, our institute is committed to addressing the pressing issue of land degradation. In this regard, we are excited to present our project, which focuses on contributing to the achievement of Land Degradation Neutrality (LDN) targets. The goal is to enhance land cover, increase soil organic carbon levels, and improve land productivity through Sustainable Land Management (SLM) and Sustainable Forest Management (SFM) practices in the Sakarya Basin.

PVRefaCE
PV Recycle for a Circular Economy

Recycling of Crystalline Silicon Photovoltaic Panels via Life Cycle Analysis

At Ege University, we place importance on not only renewable energy sources but also increasing the sustainability of these technologies. In this context, a project is being conducted on the recycling of end-of-life photovoltaic modules with the aim of transforming components such as silicon cells and busbars into reusable forms. Additionally, detailed life cycle analyses of PV cells are being conducted with the data obtained.

Within the scope of the project titled "Sustainable Land Management and Climate Friendly Agriculture" with the number GCP/TUR/055/GFF/FFS carried out by FAO (Food and Agriculture Organization of the United Nations), 4 biogas plants with a capacity of 100 cattle were installed in 4 farms (Ereğli and Karapınar in Konya; Göztepe and Demiryurt in Karaman) determined as a result of feasibility studies conducted in Konya and Karaman and commissioned in 2022.

Within the scope of the project titled "Contributing to Land Degradation Neutrality (LDN) Target Setting by Demonstrating the LDN Approach in the Upper Sakarya Basin for Scaling up at National Level" numbered GCP/TUR/065/GFF, which is being carried out by FAO (Food and Agriculture Organization of the United Nations), feasibility studies for determining the biogas potential in Kütahya, Eskişehir and Ankara provinces will be completed and sample system installations will be carried out in the determined villages.

ENERGY APPLICATIONS

Ege University carries out studies on the use of renewable energy and energy-efficient practices and aims to spread this concept throughout the campus. In this context, an "Energy Management Coordinatorship Unit" was established to manage the energy-efficient building concept from a single point during the repair and new building construction phases in the existing buildings of our university. The team, consisting of expert academics, meets regularly and determines the implementation steps by creating sustainable, environmentally friendly action plans that reduce greenhouse gas emissions in Ege University's energy production, supply and consumption processes.

A total of 16kWp photovoltaic power system within Ege University Solar Energy Institute and BESTMER, total energy production: 33.000kWh/year

Renewable Energy and Energy Efficiency Technical Assistance Project (YEVDES)

Within the Project's scope, the library building's annual electrical energy consumption of 1.5 million kWh is planned to be met by installing a photovoltaic system on the parking lot.

With the 4 MW CarPort photovoltaic power system, which is planned to be installed in Ege University parking lots and whose feasibility has already been completed, it is aimed to meet 10% of E.U.'s energy needs.

In 2022, with the electricity tariff change 1.66%; i.e. 860,269.72 TL savings per year.

Carbon Neutral

Within the framework of the "Sustainable Green Campus" studies and the Sustainable Green University Strategic Plan, which have been ongoing since 2011 by Ege University Environmental Problems Research and Application Center, a first in Turkey was realized and Ege University's Carbon Footprint was calculated. In the light of the analysis, which covers all units of Ege University and the hospital, it is aimed to reduce the environmental footprint and identify more sustainable options. In addition, electricity consumption is controlled through a software that enables effective monitoring in a digital environment.

ENERGY AND SOCIETY

In addition to creating services and products through University - Public - Industry Cooperation, Ege University also focuses on awareness raising and information activities. Within this framework, direct services are provided to the local industry with the aim of increasing energy saving and clean energy (energy saving assessments, workshops, research on renewable energy alternatives). In addition to providing paid consultancy services within the scope of cooperation agreements, free joint project preparations are carried out.

Renewable Energy Sources Themed Activities

Ege University hosted and supported students from many schools and universities throughout 2022 in order to raise awareness about renewable energy sources among children and young people in many age groups.

In 2022, MARENTECH Expo, organized with the contributions of Ege University, was held at Fuar Izmir between 26 - 28 October 2022. The conference was organized for industry professionals with the participation of many national and international reputable companies and hundreds of expert investors and buyers. MARENTECH Expo brought together the public, investors, industrialists and suppliers with a comprehensive coverage of the offshore energy technologies sector. The fair will continue its activities under the name of "Wenergy Expo" starting from 2023.

The pieces of training titled "Renewable Energy Introduction", "Flexible and Lightweight Next Generation Solar Cells" and "Wind and Photovoltaic Energy Technologies", which form part of the Fall Course on "Renewable Energy" organized by the "Board of European Students of Technology (BEST)" community, were held at the Solar Energy Institute (September 2022).

26 – 28 October 2022

MARENTECH EXPO

Within the scope of the EU-funded "BEST for ENERGY" project, BEST FOR SOLAR IDEATHON was organized by Ege University and Izmir Development Agency on 22-23 October 2022 and BEST FOR BIOMASS on 14-15 May 2022. These Ideathons, which are the source of new ideas for solar energy applications, were hosted by Ege University Solar Energy Institute and BESTMER.

In ideathons, where interdisciplinary work is emphasized, people with different education, experience, age and interests are included in the teams in order to address the theme with different dimensions, enabling more innovative ideas to emerge. During the events, innovative ideas related to solar energy and biomass were discussed. The ideas were discussed with the competing teams and their expert mentors who supported these teams. More than 30 teams from 20 universities in different cities across Turkey participated in these two events.

THE Impact Rankings Methodology 2024 & GRI Index Matrix

THE	Impact Rankings Methodology 2024 Version 1.1	GRI	Disclosure	Reported	Page
7.1	**Research on clean energy**			Fully	**1,2**
7.2	**University measures towards affordable and clean energy**			Fully	**3,4**
7.2.1	Energy-efficient renovation and building Have a policy in place for ensuring all renovations or new builds are following energy efficiency standards	G4 CONSTRUCTION AND REAL ESTATE SECTOR G4-DMA SECTOR SPECIFIC GUIDANCE FOR Disclosure on		Fully	**3,4**
7.2.2	Upgrade buildings to higher energy efficiency Have plans to upgrade existing buildings to higher energy efficiency	G4 CONSTRUCTION AND REAL ESTATE SECTOR G4-DMA SECTOR SPECIFIC GUIDANCE FOR Disclosure on		Fully	**3,4**
7.2.3	Carbon reduction and emission reduction process Have a process for carbon management and reducing carbon dioxide emissions	305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions 305-4 GHG emissions intensity 305-5 Reduction of GHG emissions	Fully	**3,4**
7.2.4	Plan to reduce energy consumption Have an energy efficiency plan in place to reduce overall energy consumption	GRI 302: Energy 2016	302-4 Reduction of energy consumption	Fully	**3,4**
7.2.5	Energy wastage identification Undergo energy reviews to identify areas where energy waste is highest	GRI 302: Energy 2016	302-4 Reduction of energy consumption	Fully	**4**
7.2.6	Divestment policy Have a policy on divesting investments from carbon-intensive energy industries notably coal and oil			Fully	**3,4**
7.3	**Energy use density**			Fully	**3,4**
7.3.1	Energy usage per sqm		305-1 Direct (Scope 1) GHG emissions	Fully	**3,4**
	Total energy used			Fully	**3,4**
	University floor space			Fully	**3,4**
7.4	**Energy and the community**			Fully	**4**
7.4.1	Local community outreach for energy efficiency Provide programmes for local community to learn about importance of energy efficiency and clean energy			Fully	**4**
7.4.2	100% renewable energy pledge Promote a public pledge toward 100% renewable energy beyond the university	G4 Sector Disclosure 2012 G4-EN3 ENERGY CONSUMPTION WITHIN THE ORGANIZATION OG2 TOTAL AMOUNT INVESTED IN RENEWABLE ENERGY		Fully	**2,4**
7.4.3	Energy efficiency services for industry Provide direct services to local industry aimed at improving energy efficiency and clean energy (energy efficiency assessments, workshops, research renewable energy options)	G4 CONSTRUCTION AND REAL ESTATE SECTOR G4-DMA SECTOR SPECIFIC GUIDANCE FOR Disclosure on Management Approach		Fully	**2,4**
7.4.4	Policy development for clean energy technology Inform and support governments in clean energy and energy- efficient technology policy development			Fully	**4**
7.4.5	Assistance to low-carbon innovation Provide assistance for start-ups that foster and support a low- carbon economy or technology			Fully	**4**

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