2023
Sustainability Report
SDG 7

AFFORABLE AND CLEAN ENERGY

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 2023 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 2023 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

AFFORDABLE AND CLEAN ENERGY

The United Nations Sustainable Development Goals (SDGs) provide a significant roadmap aiming to achieve a sustainable future globally, presenting a crucial guide for humanity. The seventh goal, titled "Affordable and Clean Energy," holds immense environmental and social importance on a global scale.

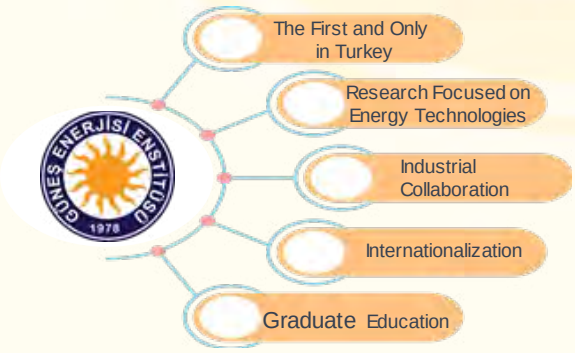
Ege University places a strong emphasis on access to clean and sustainable energy in its academic research, projects, societal contributions, and educational endeavours. As an institution, it prioritizes the utilization of renewable sources and energy efficiency.

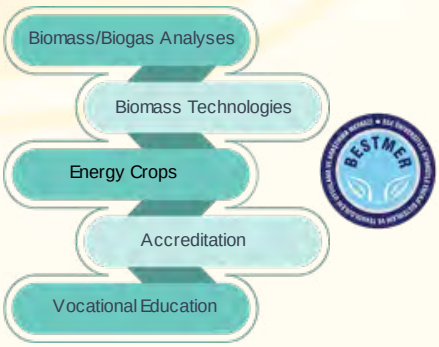
The goal of "Affordable and Clean Energy" plays a critical role in meeting the energy demands of the modern world and simultaneously addressing major environmental challenges, such as climate change. The excessive use of traditional fossil fuel sources leads to the emission of greenhouse gases into the atmosphere, contributing to global threats. Therefore, the development and utilization of clean energy sources are of paramount importance from both environmental and economic perspectives.

The goal of achieving accessible and clean energy aims to ensure sustainable utilization of energy resources and provide access to energy for everyone. This is a critical step in reducing energy poverty and supporting economic development in developing countries. Simultaneously, the use of clean energy sources can improve air quality and mitigate health issues by replacing fossil fuels. Accessible and clean energy also presents significant opportunities for the business sector. Renewable energy technologies create green business opportunities, while energy efficiency measures can reduce operational costs for businesses, contributing to the establishment of a more sustainable and competitive economy in the long run. In conclusion, the "Accessible and Clean Energy" goal holds vital importance for the future of the world. Encouraging clean energy and increasing access to energy are significant steps in combating climate change and supporting global development. Achieving this goal will not only protect our environment but also contribute to building a fairer and more sustainable world.

RESEARCH AND EDUCATION

Ege University contributes to sustainable energy solutions by conducting innovative research in clean energy production and energy efficiency within the framework of Sustainable Development Goals. Many departments of the university engage in studies focused on the more efficient and effective use of energy resources. Additionally, the university has two units, the Solar Energy Institute and the Biomass Energy Systems and Technologies Applications and Research Center (BESTMER), which conduct national and international R&D activities on the development of renewable energy sources, energy efficiency, energy storage, and energy policy formulation. Since their establishment, both units have been actively involved in significant activities at the national and international levels to promote the widespread use of renewable energy Moreover, under the umbrella of the Solar Energy Institute, there is a graduate-level Solar Energy Department that provides education with a focus on renewable energy sources. Various faculties and schools within the university offer numerous energy-themed programs.





Within the scope of Ege University's " 2019-2023 Strategic Plan," one of the five thematic areas identified is Energy. Additionally, the topic of Energy is presented in connection with other priority areas within the Higher Education Council (YÖK) priority areas and TÜBİTAK's 2022-2023 R&D and Innovation Topic Headings. All faculties, institutes, and research centers within Ege University place special emphasis on this matter in their research activities.

191 Publications

53 National and International Projects

Among all the academic programs at Ege University 18 doctoral programs are directly or highly related to the field of energy.;

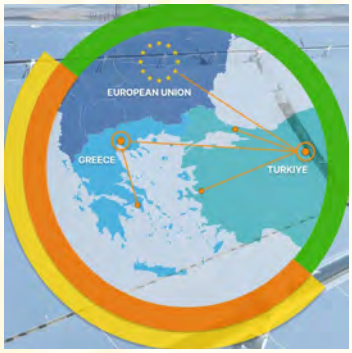
- **13 associate degree programs**
- **6 undergraduate programs**
- **24 master's programs**
- **18 doctoral programs**

are directly or highly related to the field of energy.
Throughout the university, a total of;

- **57 associate degree**
- **145 undergraduate**
- **192 graduate level** (including both doctoral and master's level), include content related to the field of energy or directly have the title of energy.

Greek-Turkish Solar Energy Centre of Excellence for Advancing the European Green Deal: SolarHub

SolarHub is an EU-funded project that brings together solar energy centers in Turkey and Greece to strengthen research and practice in the field. A joint research and innovation strategy is developed through collaboration between five centers in Ankara, Izmir, Istanbul, Athens and Thessaloniki. The project aims to design four different solar energy solutions with the contribution of industry, public sector, academia and civil society, and to put these solutions into use in various fields, especially in the agricultural sector. In this way, the transformation of research into practical applications is accelerated and an innovative cross-sectoral cooperation is ensured.



Recycling of Crystalline Silicon Photovoltaic Panels via Life Cycle Analysis

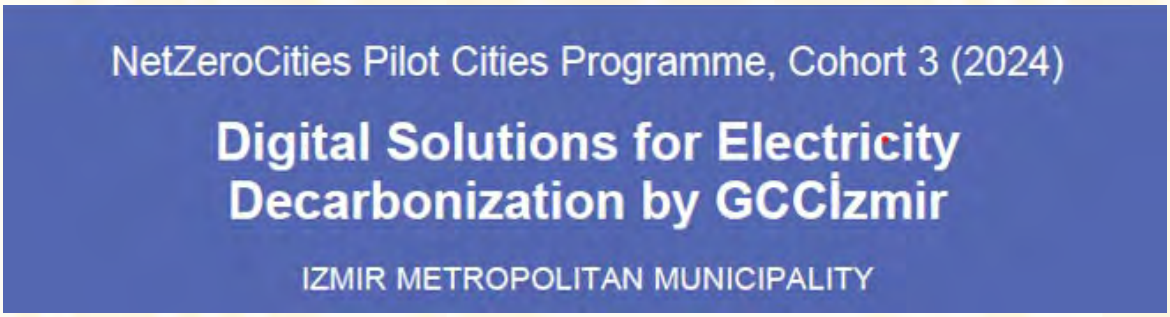
As a solar energy institute, we are committed to not only sustainable energy sources but also eco-friendly practices. In this context, we are delighted to introduce our recycling project, aimed at reducing environmental pollution and contributing to the conservation of natural resources. Project led by Solar Energy Institute, this rapidly growing waste problem, the PVREfaCE team aims to provide eco-friendly, energy-efficient, economic, and most importantly sustainable contributions for future generations

PVRefaCE

• **Net Zero Cities** is an initiative under the European Union's **Mission for Climate-Neutral and Smart Cities.** Its goal is to help cities across Europe achieve **climate neutrality by 2030.**

• The **Net Zero Cities platform** provides cities with the **tools, resources, and expertise** needed to transform their infrastructure, energy systems, transportation, and overall sustainability practices.

• In this context, **Izmir was selected as a pilot city** for the NetZeroCities initiative **in 2023**.



The Digital Solutions for Electricity Consumption by Global Climate Community Izmir (GCC-SYNERGY) project, of which Ege University is a partner, has enabled Izmir to be included among 25 pilot cities in 12 countries by the NetZeroCities Platform. The GCC SYNERGY digital platform aims to revolutionize electricity consumption management by empowering electricity consumers to optimize their energy use and transition to sustainable practices, thereby acting as a catalyst for İzmir's decarbonization efforts.

ENERGY APPLICATIONS

In 2023, Ege University's Solar Energy Institute and BESTMER collectively operated a photovoltaic power system with an installed capacity of approximately 26 kWp, generating around 40,000 kWh of clean, renewable energy annually.

Ege University conducts research on the use of renewable energy and energy-efficient applications, aiming to disseminate this concept throughout the entire campus. In this context, the " Energy Management Coordination Unit» has been established to centrally manage the energy-efficient building concept during the renovation and construction phases of existing and new buildings on our university campus. Comprised of expert academicians, the team regularly convenes to formulate and implement action plans for sustainable, environmentally friendly, and greenhouse gas-reducing practices in Ege University's energy production, supply, and consumption processes"

Sustainable Aplications of Solar Energy: Agrivoltaic in the Frame of SolarHub Project

Ege University, as a partner in the "SolarHub" project led by the Ege University Solar Energy Institute, actively contributes to advancing sustainable environmental initiatives in alignment with the European Green Deal and Clean Energy Transition goals. Officially titled "Greek-Turkish Solar Energy Centre of Excellence for Advancing the European Green Deal: SolarHub," the project focuses on strengthening the solar innovation ecosystems of Greece and Turkey through collaborative efforts. A key activity involves the design, performance monitoring, and IoT-based optimization of pilot agrivoltaic systems, implemented in partnership with BriteSolar in Thessaloniki and Middle East Technical University (METU) in Ayaş, Ankara. On June 22, Ege University also contributed to creating a roadmap promoting the integration of solar energy into agricultural practices, showcasing its commitment to sustainable energy solutions and environmental innovation.

SolarHub Technical Tour

Carbon Neutral

Ege University's Center for Environmental Problems Research and Application has been conducting the 'Sustainable Green Campus' initiative since 2011, as part of the Sustainable Green University Strategic Plan. As a pioneering effort in Turkey, Ege University has calculated its Carbon Footprint. Through planned activities in light of the analysis covering all units and the hospital of Ege University, the aim is to reduce the environmental footprint and identify more sustainable options. Additionally, the electricity consumption is monitored through software that enables effective tracking in the digital environment.

In 2023, with the change in electricity tariff, and profit margin was reduced to 3.345% from the 5% savings of equivalent to an annual savings of 3,448,223.84 TL."

ENERGY AND SOCIETY

Ege University, in collaboration with University-Industry-Government Cooperation, focuses not only on creating services and products but also on awareness and informative initiatives. Within this framework, direct services are provided to the local industry to enhance energy efficiency and clean energy goals (such as energy efficiency assessments, workshops, research on renewable energy alternatives). In addition to providing fee-based consultancy services under cooperation agreements, free joint project preparations are also undertaken.

5

At Ege University Technopark, there are start-ups with a focus on sustainability.

Renewable Energy Resources Themed Activities

Renewable Energy Technologies Summer School

Within the framework of the "TÜBİTAK 2237-A Scientific Education Event Support" program, we organized the **"Renewable Energy Technologies Summer School"** at our institute on September 27-29, 2023. Over the course of three days, **we hosted 30 participants at the master's, doctoral, and researcher levels** from various institutions and disciplines. During the summer school, fundamental theoretical knowledge in the field of renewable energy was provided, our laboratories were introduced, and a technical tour was organized. In the discussion and evaluation section, the training process was assessed, and feedback from participants was both gratifying and insightful, offering valuable input for future events.

Within the scope of Ege University, a diverse group of students from various educational levels—secondary school, high school, and vocational school—were warmly welcomed. Approximately 300 students participated, exploring the university's modern laboratories and gaining in-depth knowledge on the latest advancements in renewable energy technologies and sustainability. During their visit, they received comprehensive information on Ege University's ongoing research and development efforts aimed at fostering a sustainable and energy-efficient future. This visit not only provided students with practical exposure but also offered an inspiring perspective on the transformative potential of renewable energy in achieving global sustainability goals.

On November 2, 2023, we organized a workshop titled "New Trends on Photovoltaic Applications" at the Solar Energy Institute of Ege University. The event featured presentations from prominent experts, including representatives from the Fraunhofer Institute for Solar Energy Systems ISE, covering topics such as "Integrated PV - Synergies and Sustainability," "Agrovoltaics: Performance Assessment," and "From Preventive to Predictive Maintenance of PV Systems." The workshop provided a valuable platform for discussing the latest advancements and trends in photovoltaic technologies, contributing to ongoing research and development in the renewable energy sector.

THE Impact Rankings Methodology 2025 & GRI Index Matrix

THE	Impact Rankings Methodology 2025 Version 1.1	GRI	Disclosure	Reported	Page
7.1	**Research on clean energy**			Fully	**1, 2, 3, 4**
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	**3, 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	**4**
7.3.1	Energy usage per sqm		305-1 Direct (Scope 1) GHG emissions	Fully	**4**
	Total energy used			Fully	**4**
	University floor space			Fully	**4**
7.4	**Energy and the community**			Fully	**4,5**
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, 5**
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, 3, 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	**4, 5**
7.4.4	Policy development for clean energy technology Inform and support governments in clean energy and energy- efficient technology policy development			Fully	**2, 3, 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	**2, 3, 4**
7.5	Low-carbon energy use This indicator asks for the amount of low-carbon energy used in the university, and the total amount of energy used.			Fully	**2, 3, 4**

EDITOR: Assoc. Prof. Dr. Göknur ŞİŞMAN AYDIN

AUTHORS: Assoc. Prof. Dr. Burak GÜLTEKİN - Res. Assist. Harun GÜMÜŞ

GRAPHIC DESIGN: İpek TEKİN

www.surdurulebilir.ege.edu.tr