

# 7. Affordable and Clean Energy



Scholarly Output:

**146**



International Collaboration:

**43**



Field-weighted Citation Impact:

**0.95**



Number of Total Projects:

**13**



Number of Events:

**5**

## 1. Energy Use

In 2021, OzU achieved an energy use of about 75 MWh, which represents about a **% 80 decrease from the 2019 numbers**. This result was significantly influenced by COVID-19 and the move to remote learning, as well as the previously completed energy efficiency efforts and focus on building optimization.

OzU continues to **operate onsite tri-generation plants at the campus** and it has installed **solar PV** across the rooftops of the University building portfolio, maximizing the use of on-site renewable energy generation wherever practical. During 2021, OzU generated over 19GWh of electricity onsite.

85% of our annual electricity consumption is met with the 1.560Kw **Trijen natural gas power plant**, which was commissioned in September 2017. With this system, the flue and jacket water waste heat generated by Trijen's operation is used for heating and cooling. This corresponds to 20% of the annual heating and cooling needs.



OzU has several applications to restrict its carbon footprint including the **use of wind power and solar panels on all the non-green roofs**, as well as a trigeneration system for heating and cooling. It has recently started using a web-based carbon footprint calculator and carbon management software that provides the capacity to measure, track, report and manage its carbon footprints based on the guidelines of **"The Greenhouse Gas Protocol"**. Ozyegin calculates Scope One and Two Emissions: emissions intensity and emissions reductions, using 2018 as the base year. OzU achieved a 34 percent decrease in greenhouse gas emissions in 2021 from the 2018 emissions baseline. (From 8891 tonnes Co2 to 5905 tonnes Co2)

## 2. Public Law LL.M. Program - Energy Law Specialisation

Energy Law has recently become an area of interest for both lawyers and other experts working in the field of energy. Ozyegin University offers a master's program with a thesis which is based on a multi-dimensional course catalog of energy law to the jurists and other professionals who want to specialize in this field. By the end of this program graduates gain in-depth knowledge of all aspects of energy law and conduct scientific research.

### 3.

## Efficiency in Transformers Platform (TRAFORM)

The TRAFORM Platform was established within the scope of the agreement signed between eight electricity Distribution companies, Electricity Distribution Services Association (ELDER) and Ozyegin University. Electrical and Electronics Engineering Faculty Member Dr. Göktürk Poyrazoğlu leads the teams that examines 222 thousand transformers on the platform to develop under the project management. As a result of the project, it is aimed to reduce the energy losses from transformers by 50 percent.



The project consists of two phases and the first phase started in 2018 which entailed the production of a document called the National Energy Efficiency Action Plan. In the second phase, the projects that are included in the action plan and that can be taken into action are turned into a big project.

This project is carried out under the coordination of the Electricity Distribution Services Association, with the support of the Energy Market Regulatory Board and the Ministry of Energy and Natural Resources. It includes 3 different business packages. Ozyegin University undertook the energy efficiency work package in transformers in the first work package. Here, together with 8 companies that are stakeholders of the project in the distribution sector, we prepare a plan for more efficient replacement of transformers after analyzing data from 222 thousand units in 30 cities.

### 4.

## We Come Second in Middle-East Africa Region in “Go Green” Competition Organized by Schneider Electric

The team founded by Ece Sümer, a senior Electrical-Electronics student, Sinem Öztürk and Fatma Nur Keleş, senior Industrial Engineering students, came in second in the “Go Green” competition organized by Schneider Electric with the participation of students from all around the world. The Go Green competition is intended to facilitate the development of new solutions to global problems. With the smart home system they designed in the “Homes of the Future” category,



OzU team drew attention to household energy consumption while also increasing awareness and facilitating energy saving. The team created a platform through which energy savings can be translated into donations for countries in need. The team also supported the system with a mobile application, making it much easier to integrate it into the daily life. The competition started in September 2021 and the OzU team advanced to the MEA Regional Finals held on April 6, 2021, as the only team to represent Turkey in the Go Green MEA Regional Semi-Finals.