BİLECİK SEYH EDEBALİ UNIVERSİTY
SUSTAINABILITY REPORT - 2021

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GreenMetric BSEU

w3.bilecik.edu.tr/yesilkampus/

Contents

BSEU GreenMetric Team

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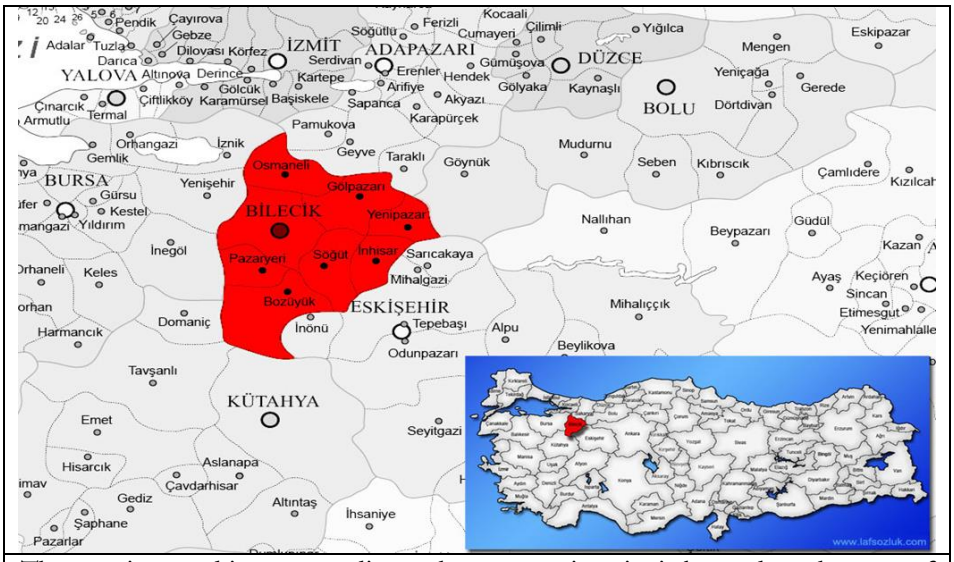
Note: In the preparation of this report, the "Garamond" font, which saves toner close to 30% compared to the most commonly used fonts, and is therefore more ecological, has been used.

1. Setting and Infrastructure (SI)

Center campus is located 6 km from Bilecik city center. Bilecik location and districts are shown on the map. University was established in 2007 and has modern and green campuses. Center campus has 46 ha area. There are also dormitory buildings on the central campus and it is a small city where students live 24 hours a day. It has 2 large parks. It also has waste water treatment plant.



The province and its surroundings where our university is located on the map of Turkey

The University Center Campus (BSEU) is located in a rural area with a high rate of forest cover. BSEU is established in the center disctrict of which located in the West site of Bilecik City. The center district has a total area of 841 km² and a total population of 78,029. This means a low population density of 93 inhabitants per km².

General view from BSEU campus

The University Center Campus (BSEU) has Disabled parking areas for disabled people to park their car which located at the nearest space building and also Bilecik Seyh Edebali University has "Accessible universities certificate".

We received the 3rd prize in our country in the ranking of accessible universities.

Sample image of the roads prepared for the disabled in the campus

On the other hand, Activities are carried out by the Disabled Student Unit Coordinator at the University. Also there is a Kindergarten on University campus and Accessible hospital for public and students near the campus.

Research hospital near the campus

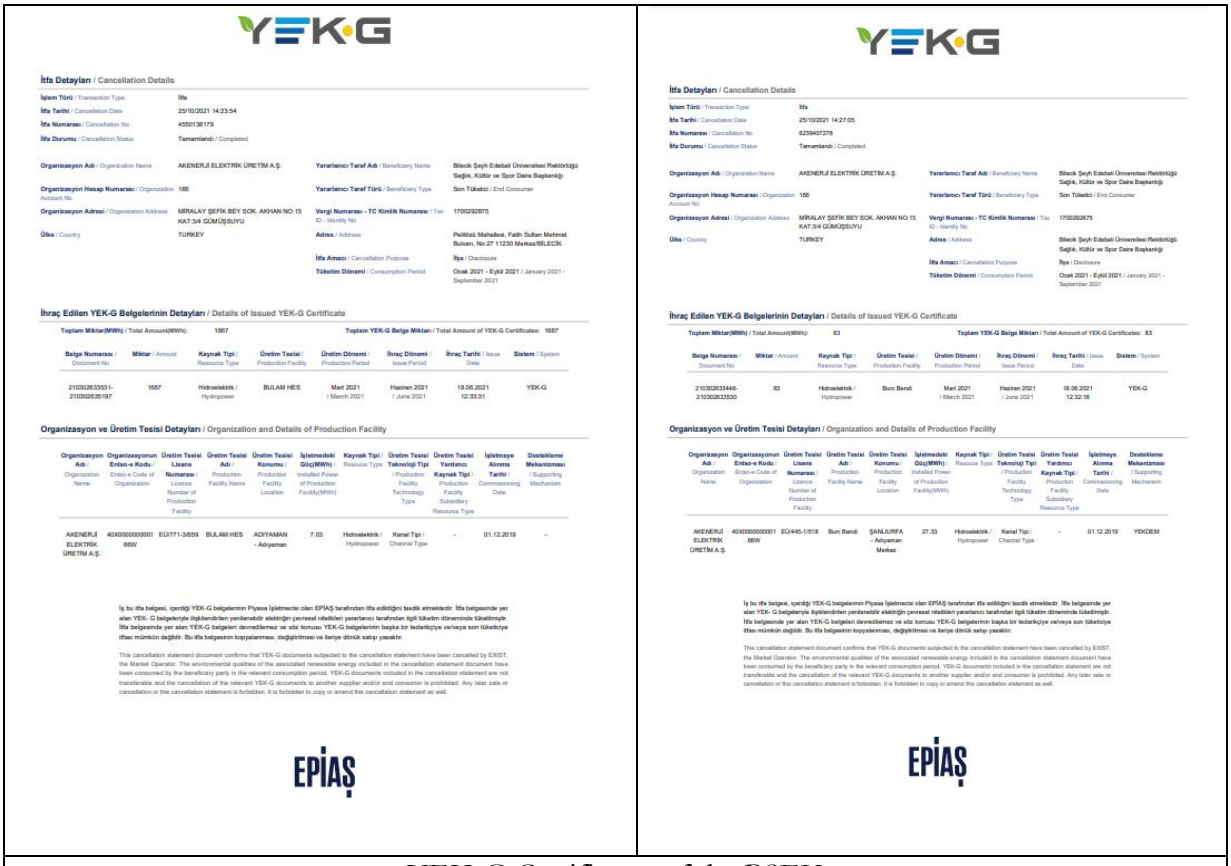
Kindergarten on campus

2. Energy and Climate Change (SI)

Since 2007, when our university was founded, roof lighting openings have been left in all buildings on the campus. Thus, maximum use of daylight is achieved, and energy is saved by using natural lighting to illuminate buildings.

Roof lighting openings in buildings on the BSEU campus

Also, BSEU has the YEK-G Certificate, which is the "identity card" of renewable energy. This document shows that some of the electricity used in our university is obtained from renewable energy sources.



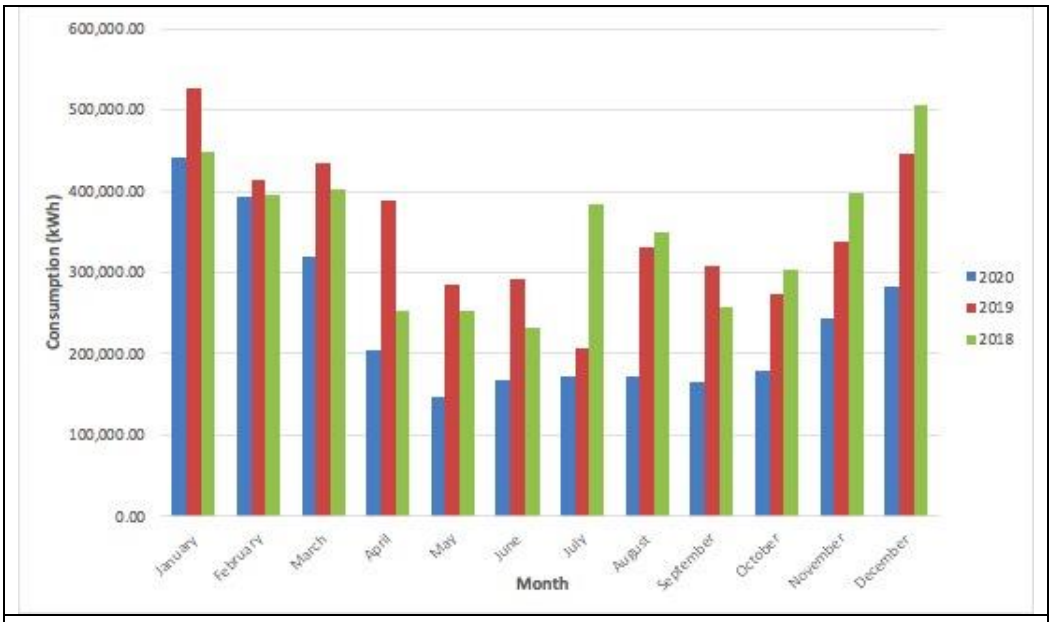
YEK-G Certificates of the BSEU

>50% of the electrical energy used in BŞÜ is provided by hydroelectric power plants (HPPs). 35% of the electricity used in Turkey is obtained from HPPs. For years, BSEU attaches importance to the fact that a certain part of the electricity it purchases is produced from renewable resources. This year, for the first time in Turkey, they have certified that the electricity sold by electricity providers is produced from renewable sources with the YEK-G certificate. There are BULAM HPP and Burc Bendi HPP belonging to the organization from which BSEU purchases electricity and sent half of BSEU's electricity from here.

The buildings constructed in our university have energy identity certificate. According to the Energy Efficiency Law No. 5627 and the Energy Performance Regulation in Buildings issued accordingly; It is a document that contains information about the energy requirement and energy consumption classification of the building, the level of greenhouse gas emissions, insulation properties and the efficiency of heating and/or cooling systems at a minimum in order to ensure the effective and efficient use of energy and energy resources in buildings, prevention of energy waste and protection of the environment.

Energy identity certificate of BSEU

The monthly energy consumption of BSEU for the last 3 years is given in the graph given below.



Monthly energy consumption of BSEU for the last 3 years

3. Waste

3.1. Recycling Program for University Waste

In Bilecik Şeyh Edebali University, wastes are collected separately according to their types. University staff and students were given the necessary training and then a zero waste system was established [a]. All buildings have bins for separate collection of glass, metal, paper, plastic, organic waste and other (non-recyclable) waste [b]. The collected wastes are taken and recycled by the Biosun Company with which the university has a contract. In addition, separate boxes are available for the collection of fluorescent lamps, electrical and electronic waste, and waste batteries [c]. These wastes are taken and evaluated by the Exitcom Company and TAP Association with which the university has a contract. Medical and hazardous wastes from laboratories are collected separately [d]. Medical wastes sterilized and disposed of by Biosun [e]. Hazardous wastes are disposed by İzaydaş company. Waste oils, oil filters and cooling liquids from the generators available at the university are also collected separately and disposed of [f].

[a] Waste information table

[b] seperate colleciton boxes for wastes

[c] Seperate boxes for lamps, electrical and

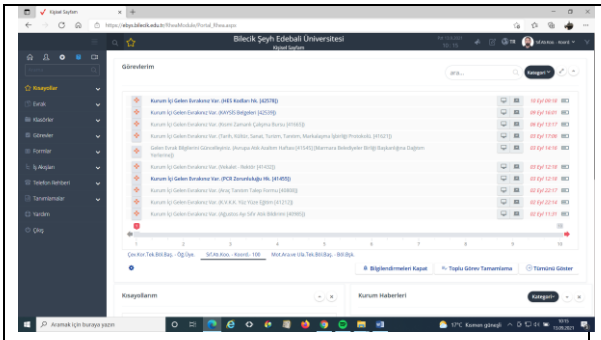
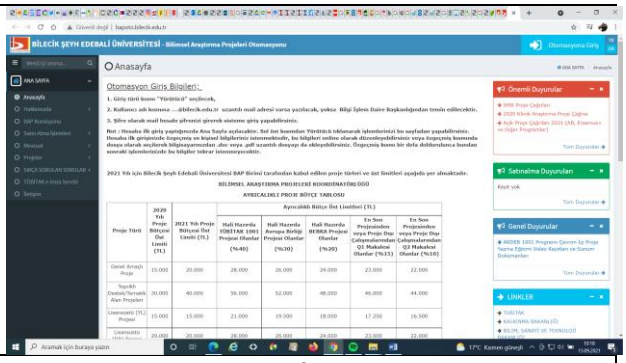
[d] Medical and hazardous wastes electronic waste, and waste batteries

[e] medical waste sterilization

[f] colleciton of Waste oils, oil filters and cooling liquids

Recycling Program for University

3.2. Program to Reduce the Use of Paper and Plastic on Campus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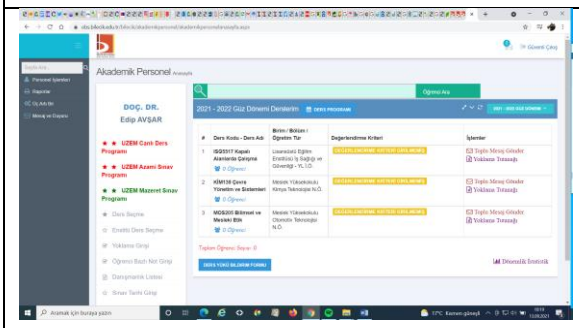
	
3	4
Program to Reduce the Use of Paper and Plastic in Campus	

In our campus, all administrative and academic correspondence and student applications (course registration, course materials, distance education, internship procedures, etc.) are made electronically in order to reduce waste. Our university has an Electronic Document Management System (EBYS) that enables official documents to be processed online. In scientific project studies, the project process management system, which enables the processing of official documents, is used. Student registrations and course procedures are also done online using the student information system (OBS) automation. In this way, both stationery costs and waste generation are saved, and correspondence and transactions are archived in a healthy way.

Metal forks, metal spoons and metal knives are used in cafeterias to reduce disposable plastic consumption. Tea and coffee are served to the personnel in the offices with glass cups.

3.3 Organic Waste Treatment

a. organic waste bins

b. Bilecik Integrated Solid Waste Facility

c. Pazaryeri Organomineral Fertilizer Production Facility

d. Compost and fertilizer products

Organic Waste Treatment

There are waste bins for the collection of organic waste in all our buildings in our university (a). The collected wastes are given to Bilecik Municipalities Union. Bilecik Municipalities Union signed a 29-year agreement with Biosun Company within the scope of domestic solid waste management. Bilecik Integrated Solid Waste Facility, owned by the company, has the capacity to process 120 thousand tons of domestic, agricultural and industrial waste and produce 15 thousand tons of compost annually from these wastes (b). The compost from this facility is the most important raw material of the organomineral fertilizer produced in Pazaryeri Organomineral Fertilizer Production Facility (c-d).

A project is being prepared to be given to the Ministry of Environment and Urbanization in order to produce compost by providing a compost machine for solid waste management in our campus. If the project is approved by the ministry, organic wastes and park and garden wastes originating from our campus will be evaluated within our own campus.

3.4 Inorganic Waste Treatment

a. Waste battery collection

b. waste battery sent to TAP for recyling

c. waste fluorescent, light bulb, electrical and electronic waste boxes

d. sending waste fluorescents to recycling

Inorganic Waste Treatment

Our university works with TAP Association, which is authorized by the Ministry of Environment and Urbanization, for the recycling of waste batteries. Waste batteries are collected in all buildings throughout the university and sent to the TAP association for recycling (a-b).
An agreement has been made with the AGID Association for the recycling of waste fluorescent, light bulb and electrical and electronic wastes at our university. Electrical and electronic wastes, fluorescent lamps and light bulbs are collected in all buildings throughout the university and sent to AGID for recycling (c-d).

3.5 Toxic Waste Treatment

<table>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td colspan="2">a. Waste battery collection</td><td colspan="2">b. waste battery sent to TAP</td></tr>
<tr><td colspan="2">   </td><td colspan="2">  </td></tr>
<tr><td colspan="2">c. waste fluorescent, light bulb, electrical and electronic waste boxes</td><td colspan="2">d. sending waste fluorescents to recycling</td></tr>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td colspan="2">e. storage of waste mineral oils</td><td colspan="2">f. sending waste mineral oils to recycling</td></tr>
<tr><td colspan="2">  </td><td colspan="2">  </td></tr>
<tr><td colspan="2">g. collection of medical and hazardous waste</td><td colspan="2">h. sterilization of medical waste</td></tr>
<tr><td colspan="4">Toxic Waste Treatment</td></tr>
</table>

Toxic wastes are collected separately at our university. Afterwards, the wastes are sent to the institutions authorized by the Ministry of Environment and Urbanization and their disposal is ensured.

- Waste batteries are collected in waste battery boxes available in each building. The collected wastes are regularly emptied and sent to the TAP association authorized by the Ministry of Environment and Urbanization (a-b).

- Fluorescent lamps, light bulbs, electrical and electronic wastes are collected in separate boxes and sent to the AGID Association authorized by the Ministry of Environment and Urbanization for disposal (c-d).
- Waste mineral oils originating from the existing generators in our university are collected separately and given to the PETDER association authorized by the Ministry of Environment and Urbanization for disposal (e-f).
- Medical wastes originating from laboratories are sterilized and given to BIOSUN company and disposed of. Hazardous wastes are collected separately and transferred to Izaydas company authorized by the Ministry of Environment and Urbanization (g-h).

3.6 Sewage Disposal

Wastewater treatment plant location

WWT Units, six packs total 900 m^3/day

Wastewater Treatment

All of the wastewater resulting from the activities carried out in the university central campus is collected through the sewer system. All of the wastewater is treated at the biological wastewater treatment plant of our university. The treatment plant consists of 9 package units and each one is 100 m3/day treatment capacity. The treated water, which meets the limit values specified in the Turkish Water Pollution Control Regulation, is discharged to the receiving environment. Rain water is collected by separate canal lines in our center campus. Project studies are continuing for the collection and use of rain water. In our other campuses, the wastewater generated is given to the municipal sewer system with the infrastructure.

4. Water

4.1 Water Conservation Program Implementation

Example of Water Conservation – Rain Water Collection

Wastewater treatment plant

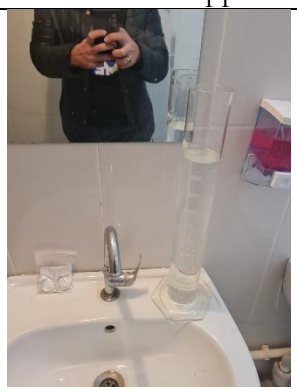
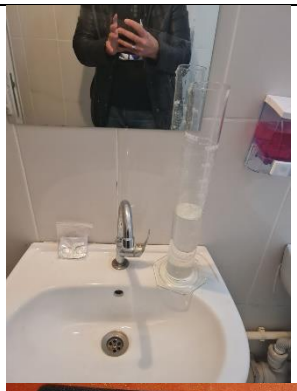
Treated water and rain water feed point to the stream

Water Conservation Program Implementation

In the infrastructure of our university, rain water and wastewater infrastructure are designed separately. Wastewater is collected and treated in our university's biological treatment plant with a capacity of 900 m^3/day. Rain water is collected from the campus by taking it into a separate channel. Treated water and collected rain water are combined in the same channel. Afterwards, it is fed into the stream passing through Karaköy locality under Gülümbe village at a distance of 2.3 km.
Rainwater on the roof of our university's construction works and technical department buildings collected in a 1m^3 tank placed here. The rain water collected in the tank is used to meet the need for irrigation. A 1 m^3 tank was placed. The tank storage area is filled with rain water coming from the roof and is used for irrigation..

Studies on the more effective use of treated water and rain water are ongoing, and these issues are explained in detail in the start-up part.

4.2 Water Efficient Appliances Usage

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>[1] Waterless urinal application</td><td>[2]Photocell faucet application</td></tr>
<tr><td>  </td><td> 
  </td></tr>
<tr><td>[3] The amount of water flowing in 9 seconds (approximately 1100 mL) without the saving device</td><td>[3] The amount of water flowing in 9 seconds with the saving device (approximately 540 mL)</td></tr>
<tr><td colspan="2">Example of Water Efficient Appliances Usage</td></tr>
</table>

[1]In order to reduce water use in our university, the application of waterless urinals has started to be tested on a pilot scale. For this purpose, 2 waterless urinals were purchased and installed. Waterless urinal systems contain membrane filters. Thus, the odoriferous components in the urine are filtered out. Since there is no odor formation, there is no need for cleaning after urination.

It has been determined that an average urinal is used 150 times a day.
A urinal with a sensor or a manual siphon system consumes 3 liters of water in each use, according to Turkish plumbing regulations.

In this situation:
1 urinal consumes: 150 uses x 3 liters = 450 liters of water in 1 day.

1 urinal consumes in 1 year: 450 liters x 365 days = 164250 liters of water (ie 164.25 m^3).

[2] In order to reduce water use, photocell faucet application has been started on a pilot scale. For this purpose, 2 photocell faucets were purchased and mounted and tested on a pilot scale. It is planned to replace the existing faucets with photocell faucets as they deteriorate.
[3]Another application for water saving is the application of saving apparatus to the taps in the rectorate building. In the experiments, it was determined that the flow rate of the water flowing from the tap was reduced by 50% without pressure loss by using this apparatus. These apparatuses are procured from Mannesmann Company and are LEED certified products.

4.4 Consumption of treated water

Car washing

Surface washing

Irrigation

siphon water

Planned alternatives for the use of treated water (implementations are still in the planning stage)

Wastewater from the activities in our university is treated in a biological treatment plant with a capacity of 900 m^3/day. Currently, there is no recovery of treated water. However, studies are continuing for the use of treated water as water for park and garden irrigation, vehicle washing, surface washing, and toilet flushing.

4.5 Percentage of additional handwashing and sanitation facilities during Covid-19 pandemic

	
toilets	corridors
	
classrooms	common areas
Disinfection spraying processes during the Covid 19 pandemic process	

	
Hand disinfectant for use at building entrances	
	
Measures taken in the university entrance (disinfectant utilization and HES code control)	

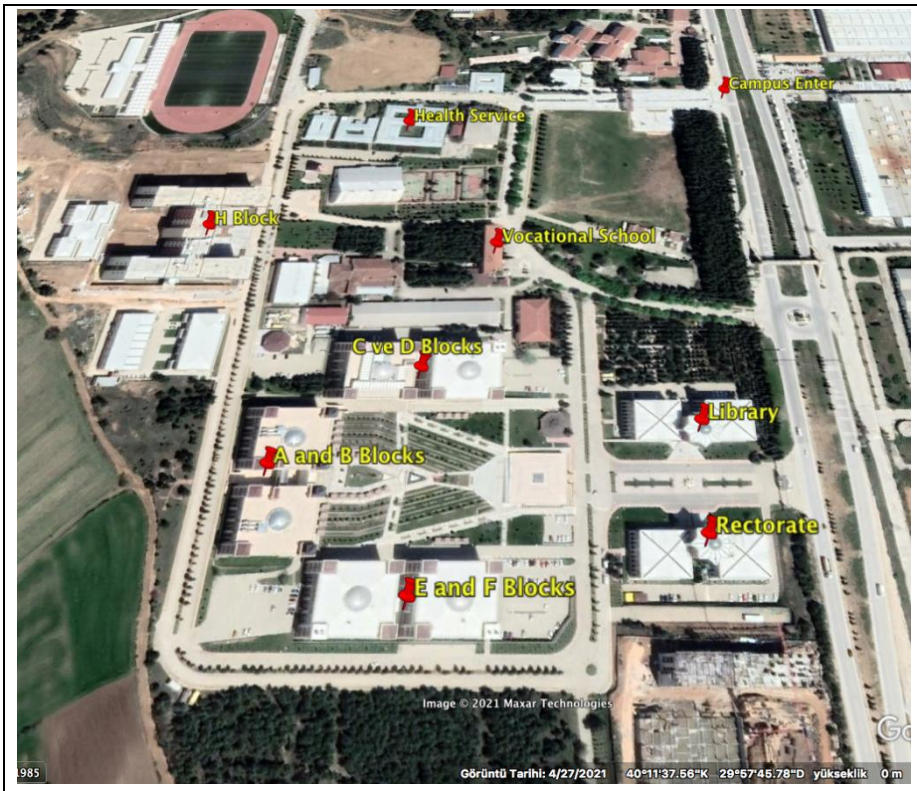
	
Waste glove and mask collection boxes at building entrances	Information on the boxes about seperate disposal of mask and gloves
Measures taken in terms of hygiene during the Covid-19 pandemic process	

Disinfection studies are carried out at certain intervals as pandemic measures at our university. Since there are more than one toilet and sink on each floor in our university buildings, there is no need to put additional equipment for hand washing.
Disinfectant stands have been set up at the entrance of each building and main entrance of university to disinfect the hands of those entering university and each building. In order to collect the waste masks and gloves that emerged during the pandemic process, a separate trash bin was organized at the entrance of each building and the necessary labeling was made.
HES (life fits home) codes, which indicate the current health status of all staff and students, are engraved on their university IDs. Checks are made at the entrance, and patients or contacts cannot enter the campus.

5. Transportation (TR)

Since the central campus area is flat and small, the distance between the campus entrance and the farthest building is 670.35 meters. This is walking distance. Therefore, the campus is not suitable for using the shuttle.

Campus enter – Rectorate: 637.8 meter
Campus enter – Library: 606.88 meter
Campus enter – E and F Blocks: 650.44 meter
Campus enter – A and B Blocks: 670.35 meter
Campus enter – C and D Blocks: 538.24 meter
Campus enter – H Blocks: 545.02 meter
Campus enter – Vocational School: 337.35 meter
Campus enter – Health Service: 330.13 meter



Walking distances of the campus (Bilecik Seyh Edebali University, Turkey)

Our university areas are bicycle and pedestrian friendly. Sidewalks and bike paths have also been established for pedestrians and cyclists. The speed limit within the campus is 30 km. Pedestrians have the right of way within the campus. There are a total of 100 bicycles given by the Ministry of Health in our university. These bikes are kept in the gym of our university. Bicycles are available for free use of students and staff on the central campus. Cyclists can take the bikes from the gym by providing the desired information and use them all day long. There is a lock system on the bicycles and students can park their bicycles in the parking areas within the campus. The bicycle, which is out of use, is taken to the gym by the cyclist and left. There are dual AC charging points on the campus of our university where electric vehicles can be charged. Within the scope of the agreement with ZES Energy solutions company, 2 electric Renault ZOE vehicles will be brought to the campus and made available to staff and students. Toyota CHR Hybrid vehicle was donated by TOYOTA Motor Turkey A.Ş to reduce emissions within the scope of support for green campus studies and to support the education and training activities of students in automotive and electric hybrid vehicle technologies departments.

	
Example of pedestrian and bicycle path (Bilecik Seyh Edebali University, Turkey)	Example of Campus Bikes
	
Toyota CHR Hybrid vehicle was donated by TOYOTA Motor Turkey A.Ş	Dual AC charging point and sample electrical vehicles

Separator between road for vehicle and pedestrian path.. Ramps and guiding blocks which have suitable design for pedestrian having physical disabilities. Street lamp for pedestrian in night. Lishan College has LED lamps, which control the solar street lights automatically through the intensity of light.
Limiting parking zone for students as done new campus enter gate. After this park is full, student vehicles are taken into the campus.

Total main campus area: 468025 m2
Total parking area = 18776 m2
Ratio = 0.04

Free to rent bicycle on campus. Not taking public transportation vehicles to campus in order to reduce vehicles on campus. Since the campus is within walking distance, it is not suitable for shuttle use so there aren't the shuttle services on our campus. In order to reduce the number of vehicles on

the campus, free bicycles were provided to students instead of student vehicles, public transportation and shuttle services.

No.	Vehicle	Total Number
1	Car managed by the university	18
2	Cars entering the university	837
3	Motorcycles entering the university	13
	Total	**868**

5.4 = 868 / 1105 (population) = 0.78

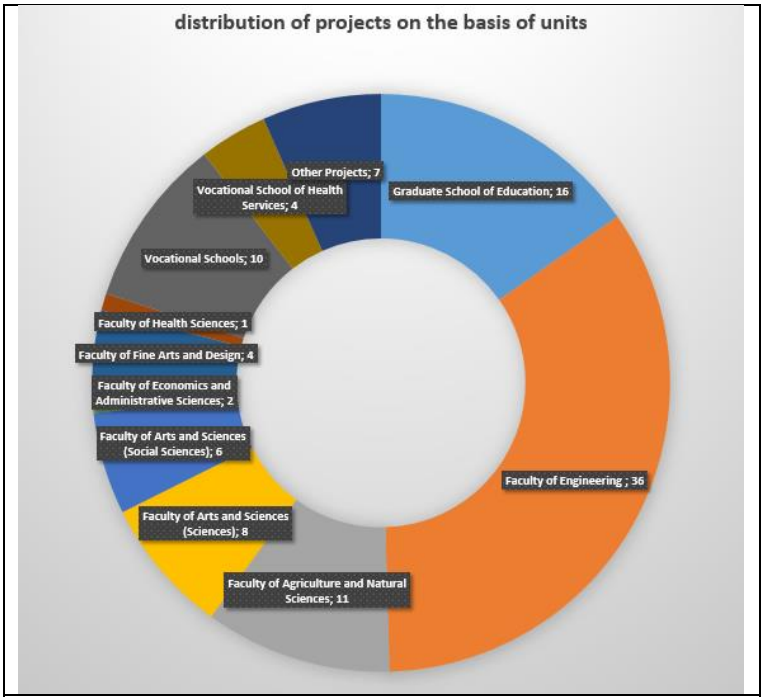
Public transportation (Bilecik Seyh Edebali University, Turkey)

6. Education (ED)

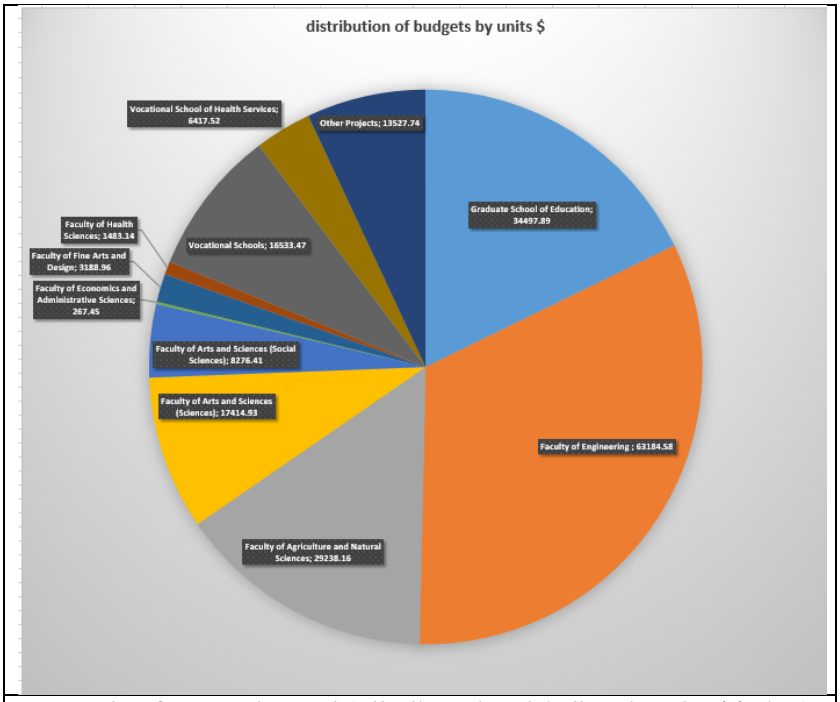
In BSEU's Curriculum Refresh programme which aims to embed sustainability into all course and module content offered by the University. Total number of courses with sustainability embedded for courses running in 2020/2021: about 5000.

A total of 105 projects were supported in our university in 2020. The total support given by the university for these projects is US$ 194030. In 2019, US$ 369593 support was given to the projects. Since 2021 continues, no reporting has been made yet. For this reason, the data for 2021 will be included later.

Total research fund in 2019 = 369593 US Dollars
Total research fund in 2020 = 194030 US Dollars
The averaged annum last 2 years of research fund = 281811 US Dollars

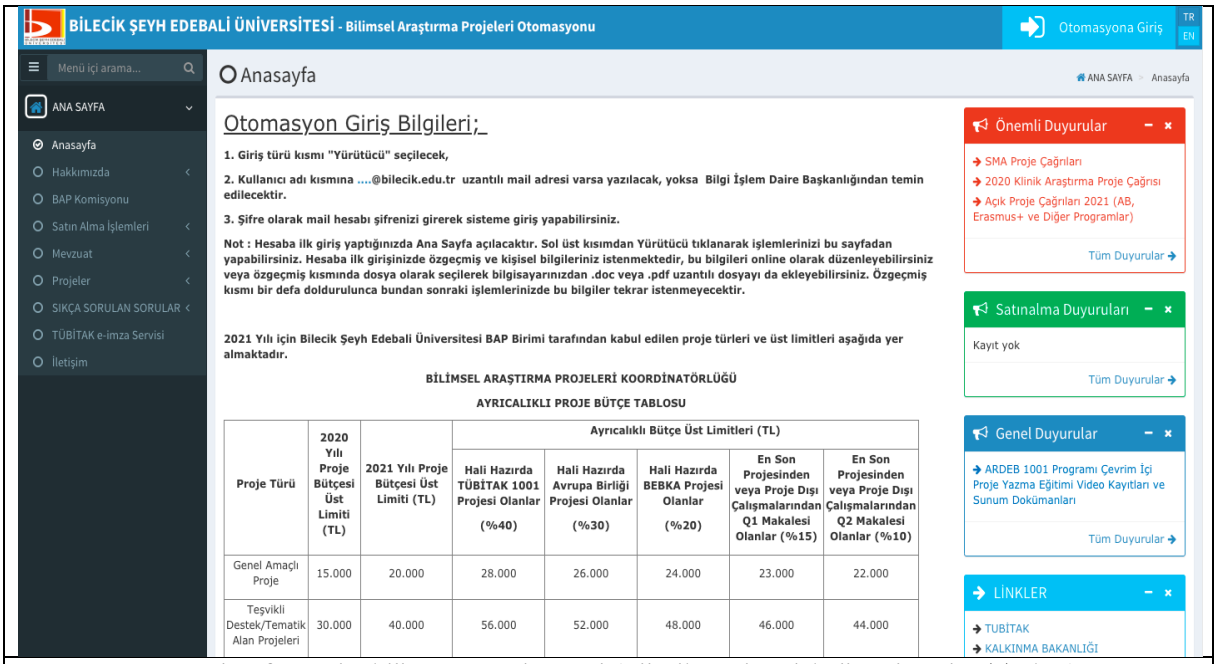


Distrubiton of research Project on the basis of units (Bilecik Seyh Edebali University, Turkey)



Example of Research Fund (Bilecik Seyh Edebali University, Turkey)

More over research funding in the Annual report 2020: http://w3.bilecik.edu.tr/strateji/wp-content/uploads/sites/53/2021/03/2020-Faaliyet-Raporu.pdf

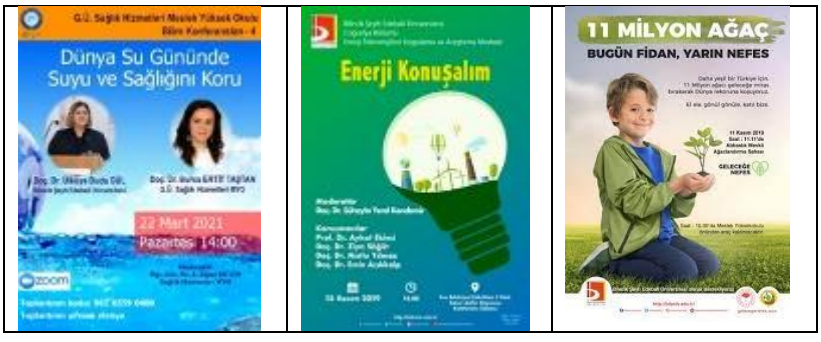


Example of Sustainability Research Fund (Bilecik Seyh Edebali University, Turkey)

Total research fund dedicated to sustainability research in 2019 = 50079 US Dollars
Total research fund dedicated to sustainability research in 2020 = 18330 US Dollars
Total research fund dedicated to sustainability research in 2021 = 33917 US Dollars
The averaged annum last 3 years of research fund dedicated to sustainability research = 34108 US Dollars

On the other hand, in the academic years of 2019-2021, an average of 101 articles on sustainability were published annually by our university.

Some of the trainings and social activities held within our university regarding sustainability are as follows.



There are 57 active student clubs in our university. Some of the students who started the university this semester are continuing to establish clubs (eg. Sustainable Green Campus, Animal Protection). Some of the events organized/contributed by these clubs are given above.

During the pandemic process, student training was carried out using Online Teaching Methods. Students continued their education by participating in live lessons. In addition, informative meetings were held on the measurement and evaluation of the courses by effectively conducting the courses on the same platform. Online meetings, symposiums and events were realized via ZOOM, TEAMS and BigBlueButton webinars. Some of these tutorials have been shared on YOUTUBE.

Online Teaching Methods (http://w3.bilecik.edu.tr/ue/)
(Bilecik Seyh Edebali University, Turkey)

➢ **Startups (ED)**

- **Start-Up-1**
  Name: Recovery of treatment plant water.
  Aim: It is aimed to reduce the cost of well water by using the discharged water for irrigation. The scope of the project is to treat 5% of the daily discharged water and use it for irrigation purposes.

- **Start-Up-2**
  Name: Collection and evaluation of rainwater.
  Aim: It is aimed to reduce the amount of groundwater use by harvesting rainwater. Determining the rain water potential, determining the water quality and determining the irrigation water usage rate are the scope of the project.

- **Start-Up-3**

Name: Improvement of pet shelters on campus.
Aim: Our campus is a natural habitat for cats, dogs, squirrels and various bird species. It has been determined that the living and feeding areas of these animals in the campus are inadequate and not in accordance with the standards.

- **Start-Up-4**

Name: Increasing the use of energy efficient LED lamps.
Aim: The aim of the project is to reduce the electricity consumption of our university. In this context, the rectorate and library buildings were selected for the pilot application. The scope of the project consists of making the lighting more ergonomic and reducing the cost of lighting by converting the lighting system to LED (36 W) in buildings.

- **Start-Up-5**

Name: Dissemination of ecological fonts.
Aim: It is aimed to reduce the amount of paper and toner used in student information evaluation at our university. The scope of the study is to provide savings in paper and toner usage by using ecofont software in the unit there the exam papers are printed.

- **Start-Up-6**

Name: Reducing the use of single-use plastic materials.
Aim: The aim of the study is to reduce the use of plastic cups by staff and students, to raise awareness about this issue and to make it a way of life.

- **Start-Up-7**

Name: Raising awareness by collecting plastic caps.
Aim: The aim of the study is to reduce the use of plastic cups by staff and students, to raise awareness about this issue and to make it a way of life.

- **Start-Up-8**

Name: Raising awareness by collecting plastic caps.
Aim: The aim of the study is to reduce the use of plastic cups by staff and students, to raise awareness about this issue and to make it a way of life.