Bilecik Seyh Edebali University

Sustainability Report

2024

BSEU GreenMetric Team

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GreenMetric BSEU

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- **Startups**

1. Setting and Infrastructure (SI)

Bilecik Şeyh Edebali University is located in the southeast of the Marmara Region; It is located in Bilecik Province, which is located on the cutting points of the Marmara, Black Sea, Central Anatolian Region and Aegean Regions. 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

Üçüncü

Bilecik Şeyh Edebali Üniversitesi

Türkiye Erişilebilirlik Ödülleri "ERİŞİLEBİLİR ÜNİVERSİTELER" kategorisinde "Jüri Oylaması'nda" üçüncülüğe hak kazandınız.
Tebrik eder, başarılarınızın devamını dileriz.

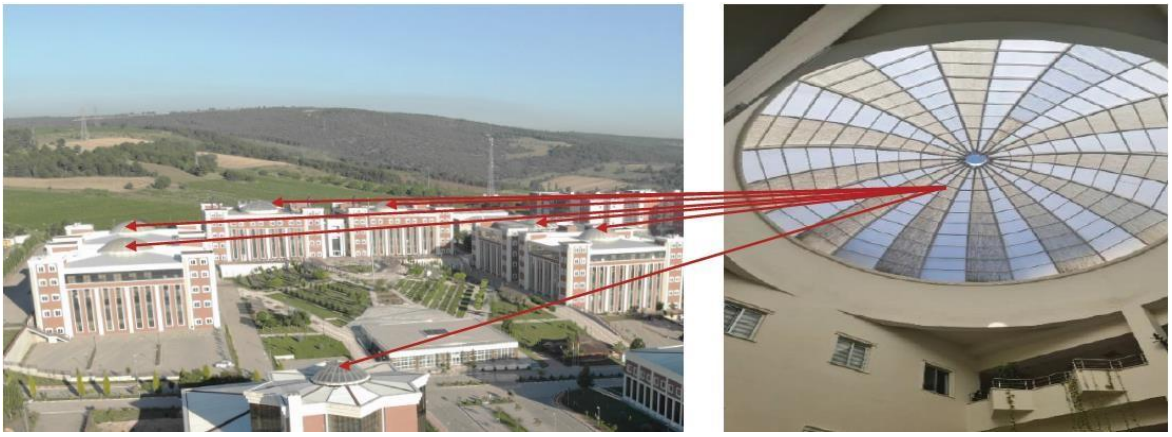
Zehra Zümrüt SELÇUK
Aile, Çalışma ve Sosyal Hizmetler Bakanı

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.

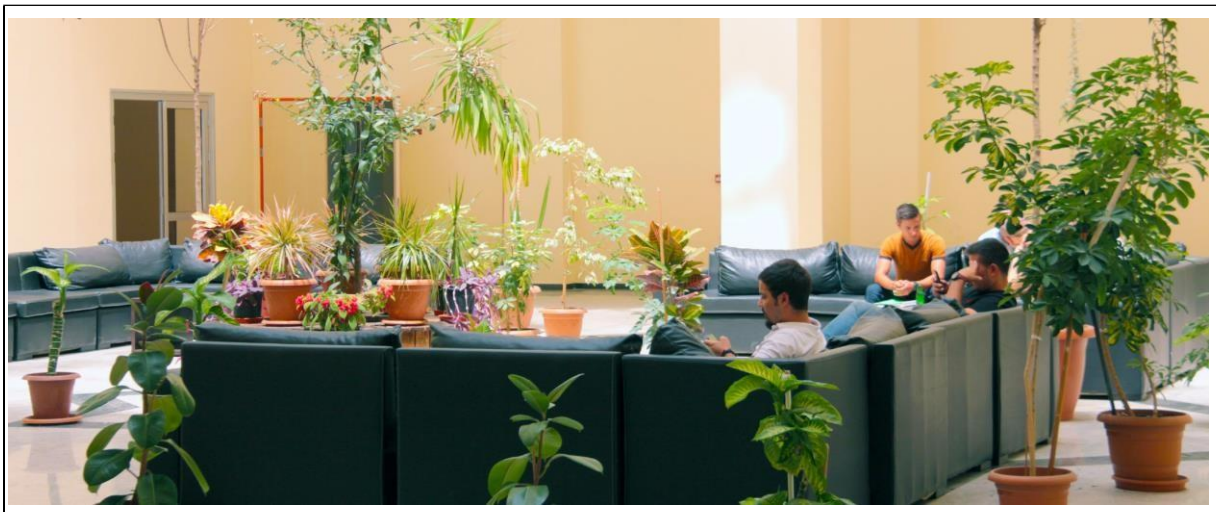
Research hospital near the campus	Kindergarten on campus

2. Energy and Climate Change (EC)

Since 2007, when our university was founded, roof lighting openings have been left in all buildings built with an innovative, environmentally friendly and sustainable architectural approach. Thus, maximum use of daylight is achieved and energy saving is achieved by using natural lighting to illuminate buildings.



Roof lighting openings in buildings on the BSEU campus



Natural lighting indoors with roof lighting openings

The issue of supplying the electricity used in our university from renewable sources is taken into consideration. For this purpose, the electricity used in our university is certified with the renewable energy resource guarantee system (YEK-G), which is the national renewable energy certificate system. This document shows that some of the electricity used in our university is obtained from renewable energy sources. Certificates for year of 2024 were given below.

YEK-G

İtfa Detayları / Cancellation Details

İşlem Türü / Transaction Type:	İtfa
İtfa Tarihi / Cancellation Date	21/08/2024 10:21:20
İtfa Numarası / Cancellation No	6557764239
İtfa Durumu / Cancellation Status	Tamamlandı / Completed

Organizasyon Adı / Organization Name	ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.	**Yararlanıcı Taraf Adı** / Beneficiary Name	BİLECİK ŞEYH EDEBALİ ÜNİVERSİTESİ
Organizasyon Hesap Numarası / Organization Account No	582	**Yararlanıcı Taraf Türü** / Beneficiary Type	Son Tüketici / End Consumer
Organizasyon Adresi / Organization Address	LEVENT 199, BÜYÜKDERE CAD. NO:199	**Vergi Numarası - TC Kimlik Numarası** / Tax ID - Identity No	1700292883
Ülke / Country	TURKEY	**Sektör** / Sector	Eğitim / Education
		Adres / Address	Pelitözü Mah. Fatih Sultan Mehmet Bulvarı No:27 - 11100 Merkez/BİLECİK
			Bilecik Merkez/BİLECİK
		İtfa Amacı / Cancellation Purpose	İfşa / Disclosure
		Tüketim Dönemi / Consumption Period	Ocak 2024 - Temmuz 2024 / January 2024 - July 2024
		Açıklama / Description	

İhraç Edilen YEK-G Belgelerinin Detayları / Details of Issued YEK-G Certificate

Toplam Miktar(MWh) / Total Amount(MWh): 2535 — **Toplam YEK-G Belge Miktarı** / Total Amount of YEK-G Certificates: 2535

Belge Numarası / Document No	**Miktar** / Amount	**Kaynak Tipi** / Resource Type	**Üretim Tesisi** / Production Facility	**Üretim Dönemi** / Production Period	**İhraç Dönemi** / Issue Period	**İhraç Tarihi** / Issue Date	**Sistem** / System
231200014863-231200017397	2535	Hidroelektrik / Hydropower	BEYKÖY HES	Aralık 2023 / December 2023	Ocak 2024 / January 2024	15.01.2024 14:23:10	YEK-G

Organizasyon ve Üretim Tesisi Detayları / Organization and Details of Production Facility

Organizasyon Adı / Organization Name	**Organizasyonun Entso-e Kodu** / Entso-e Code of Organization	**Üretim Tesisi Lisans Numarası** / Licence Number of Production Facility	**Üretim Tesisi Adı** / Production Facility Name	**Üretim Tesisi Konumu** / Production Facility Location	**İşletmedeki Güç(MWh)** / Installed Power of Production Facility(MWh)	**Kaynak Tipi** / Resource Type	**Üretim Tesisi Teknoloji Tipi** / Production Facility Technology Type	**Üretim Tesisi Yardımcı Kaynak Tipi** / Production Facility Subsidiary Resource Type	**İşletmeye Alınma Tarihi** / Commissioning Date	**Destekleme Mekanizması** / Supporting Mechanism
ZORLU DOĞAL ELEKTRİK ÜRETİMİ A.Ş.	40X0000000005821	EÜ/1723-43/1248	BEYKÖY HES	Eskişehir - Sarıcakaya	16.8	Hidroelektrik / Hydropower	Kanal Tipi / Channel Type	-	01.12.2019	-

İş bu İtfa belgesi, içerdiği YEK-G belgelerinin Piyasa İşletmecisi olan EPİAŞ tarafından İtfa edildiğini tasdik etmektedir. İtfa belgesinde yer alan YEK- G belgeleriyle ilişkilendirilen yenilenebilir elektriğin çevresel nitelikleri yararlanıcı tarafından ilgili tüketim döneminde tüketilmiştir. İtfa belgesinde yer alan YEK-G belgeleri devredilemez ve söz konusu YEK-G belgelerinin başka bir tedarikçiye ve/veya son tüketiciye İtfası mümkün değildir. Bu İtfa belgesinin kopyalanması, değiştirilmesi ve ilerlye dönük satışı yasaktır.

This cancellation statement document confirms that YEK-G documents subjected to the cancellation statement have been cancelled by EXIST, the Market Operator. The environmental qualities of the associated renewable energy included in the cancellation statement document have been consumed by the beneficiary party in the relevant consumption period. YEK-G documents included in the cancellation statement are not transferable and the cancellation of the relevant YEK-G documents to another supplier and/or end consumer is prohibited. Any later sale or cancellation or this cancellation statement is forbidden. It is forbidden to copy or amend this cancellation statement as well.

EPİAŞ

YEK-G Certificate of the BSEU (for year of 2024)

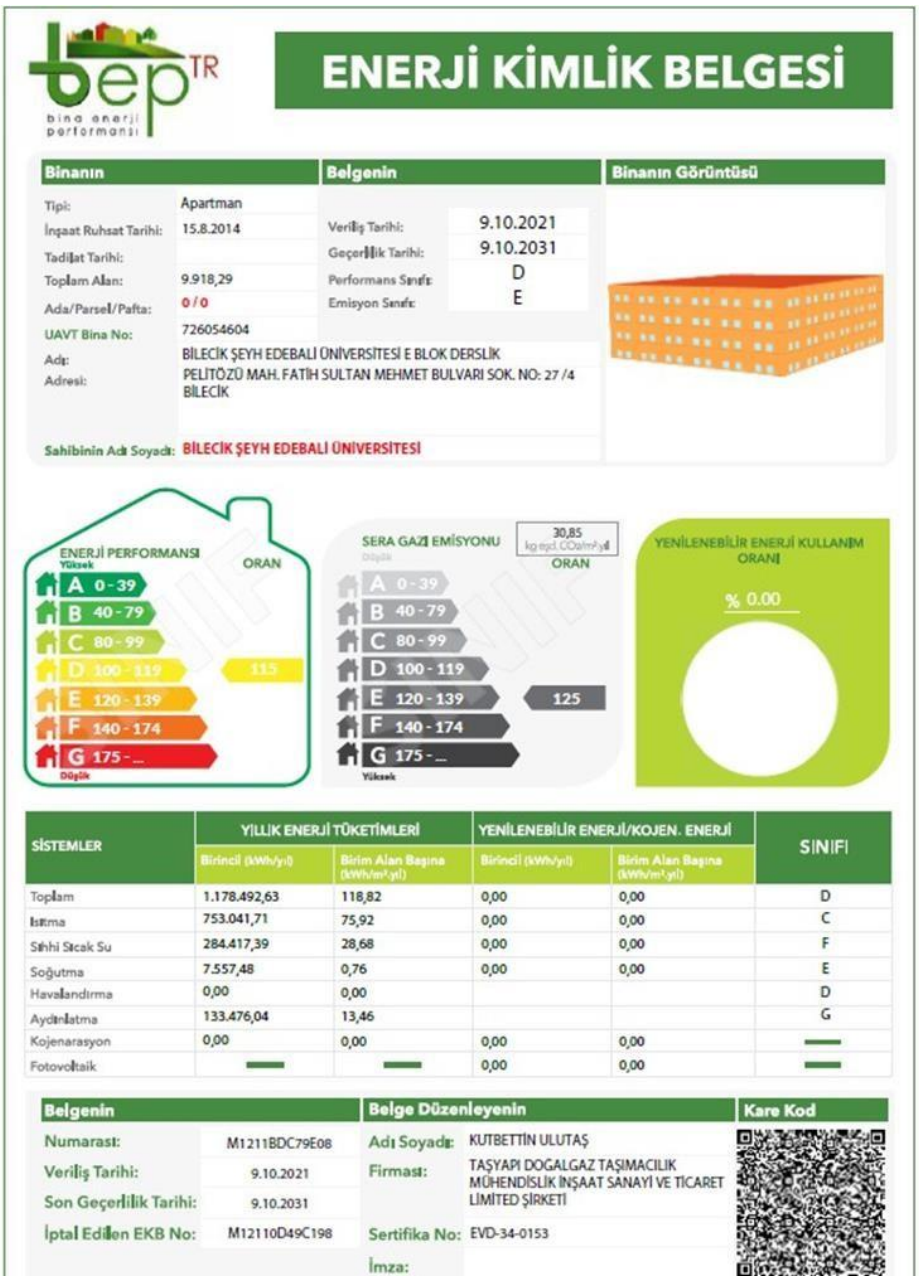
More than 50% of the electricity consumed in BŞÜ is provided by Geotermal energy. BSEU attaches importance to the fact that a certain part of the electricity it purchases is produced from renewable resources. Also, researches and studies continue for the production of electricity from the solar power at BSEU.

Example of Roof Mounted Solar Panels (Bilecik Seyh Edebali University, Turkey)

No	Renewable Energy	Production (in kWh)
1	Jeotermal power	2535000
2	Solar panel	12725
	Total	**2547725**

2547725 / 3846887 (Electricity usage)*100 = 66 %

BSEU has been paying attention to the fact that the electricity it uses is electrical energy produced from renewable sources for years. For this reason, >50% of the electricity purchased is produced in jeotermal power plants (JPPs). This year, for the second time, electricity providers have certified that the electricity they supply is produced from renewable resources with the YEK-G certificate.
Researches and studies continue for the production of electricity from the solar power at BSEU.



ENERJİ KİMLİK BELGESİ

Binanın	
Tipi:	Apartman
İnşaat Ruhsat Tarihi:	15.8.2014
Tadilat Tarihi:	
Toplam Alan:	9.918,29
Ada/Parsel/Pafta:	0 / 0
UAVT Bina No:	726054604
Adı:	BİLECİK ŞEYH EDEBALİ ÜNİVERSİTESİ E BLOK DERSLİK
Adresi:	PELİTÖZÜ MAH. FATİH SULTAN MEHMET BULVARI SOK. NO: 27 /4 BİLECİK
Sahibinin Adı Soyadı:	BİLECİK ŞEYH EDEBALİ ÜNİVERSİTESİ

Belgenin	
Veriliş Tarihi:	9.10.2021
Geçerlilik Tarihi:	9.10.2031
Performans Sınıfı:	D
Emisyon Sınıfı:	E

Binanın Görüntüsü

ENERJİ PERFORMANSI — ORAN: 115

A 0-39 / B 40-79 / C 80-99 / D 100-119 / E 120-139 / F 140-174 / G 175-...

SERA GAZI EMİSYONU — 30,85 kg eşd. CO2/m².yıl — ORAN: 125

A 0-39 / B 40-79 / C 80-99 / D 100-119 / E 120-139 / F 140-174 / G 175-...

YENİLENEBİLİR ENERJİ KULLANIM ORANI: % 0.00

SİSTEMLER	YILLIK ENERJİ TÜKETİMLERİ		YENİLENEBİLİR ENERJİ/KOJEN. ENERJİ		SINIFI
	Birincil (kWh/yıl)	Birim Alan Başına (kWh/m².yıl)	Birincil (kWh/yıl)	Birim Alan Başına (kWh/m².yıl)	
Toplam	1.178.492,63	118,82	0,00	0,00	D
Isıtma	753.041,71	75,92	0,00	0,00	C
Sıhhi Sıcak Su	284.417,39	28,68	0,00	0,00	F
Soğutma	7.557,48	0,76	0,00	0,00	E
Havalandırma	0,00	0,00			D
Aydınlatma	133.476,04	13,46			G
Kojenarasyon	0,00	0,00	0,00	0,00	—
Fotovoltaik	—	—	0,00	0,00	—

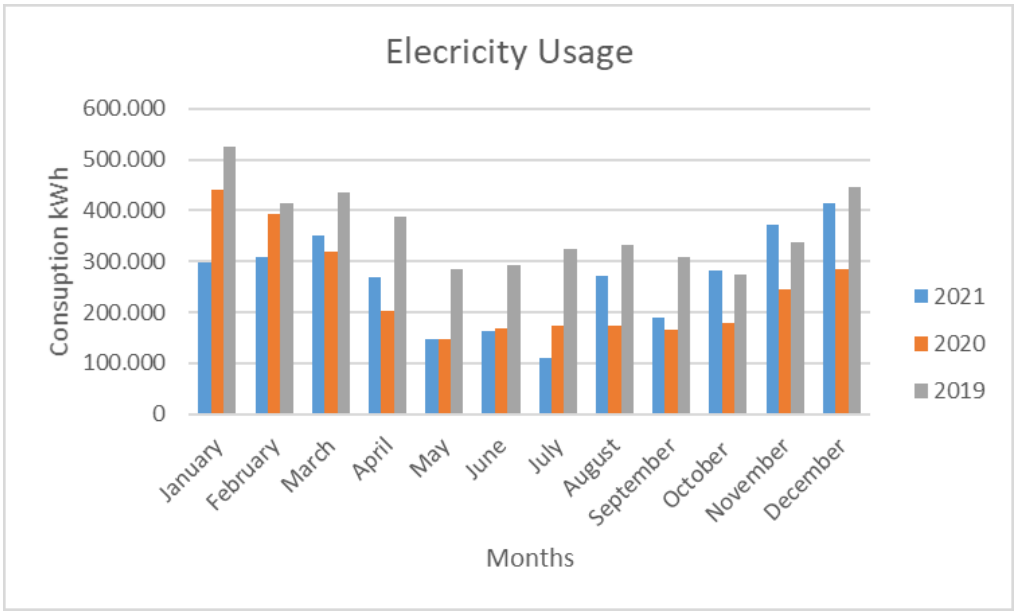
Belgenin	
Numarası:	M1211BDC79E08
Veriliş Tarihi:	9.10.2021
Son Geçerlilik Tarihi:	9.10.2031
İptal Edilen EKB No:	M12110D49C198

Belge Düzenleyenin	
Adı Soyadı:	KUTBETTİN ULUTAŞ
Firması:	TAŞYAPI DOĞALGAZ TAŞIMACILIK MÜHENDİSLİK İNŞAAT SANAYİ VE TİCARET LİMİTED ŞİRKETİ
Sertifika No:	EVD-34-0153
İmza:	

Kare Kod

Energy identity certificate of BSEU

The total electricity usage of Bilecik Seyh Edebali University Campus in 2021, 2020 and 2019 is 3,180,592,95 kWh, 2,893,120.00 kWh and 4,245,169.80 kWh respectively. On the central campus, electricity is used for lighting, cooling, heating and laboratory appliances. 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

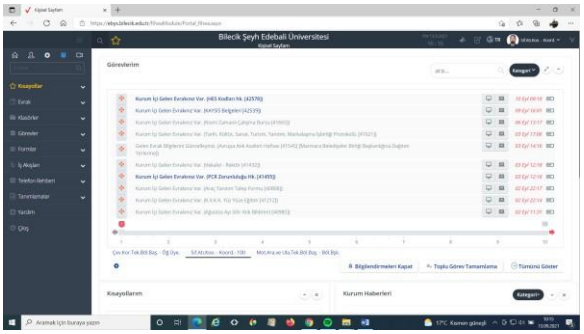
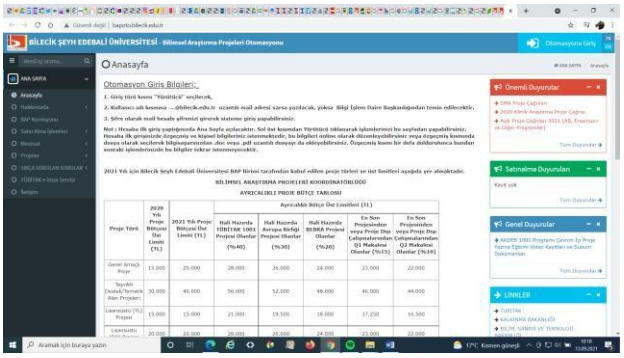
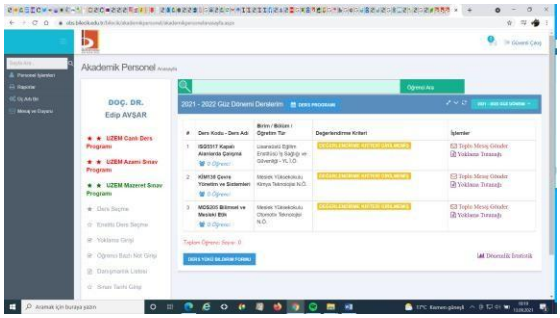
3. Waste

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]. [g] In our university, the collection of waste vegetable oils started at a pilot level.

[a] Waste information table	[b] seperate colleciton boxes for wastes
[c] Seperate boxes for lamps, electrical a	[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

	
1	2
	
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

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).

<table>
<tr><td>
</td><td> </td></tr>
<tr><td>a. organic waste bins</td><td>b. Bilecik Integrated Solid Waste Facility</td></tr>
<tr><td> </td><td>
</td></tr>
<tr><td>c. Pazaryeri Organomineral Fertilizer Production Facility</td><td>d. Compost and fertilizer products</td></tr>
<tr><td colspan="2">Organic Waste Treatment</td></tr>
</table>

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.

[1] https://bilecik.csb.gov.tr/biosun-bilecik-entegre-kati-atik-tesisine-teknik-gezi.-etkinlik
[2] http://www.hexafermgubre.com/index.asp?sec=1&menuid=191
[3] https://www.youtube.com/watch?v=27OGbADonmM

3.4. 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).

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	

3.5. Toxic Waste Treatment

a. Waste battery collection	b. waste battery sent to TAP
c. waste fluorescent, light bulb, electrical and electronic waste boxes	d. sending waste fluorescents to recycling
e. storage of waste mineral oils	f. sending waste mineral oils to recycling
g. collection of medical and hazardous waste	h. sterilization of medical waste
Toxic Waste Treatment	

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

Wastewater treatment plant	Example of Water Conservation – Rain Water Collection
Water Conservation Program Implementation	

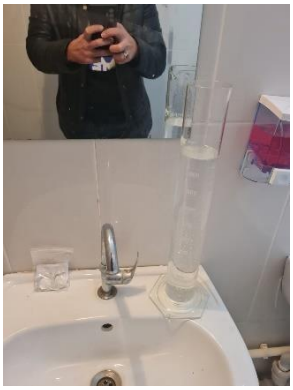
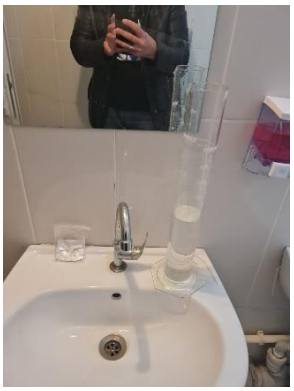
In the infrastructure of our university, rain water and wastewater infrastructure are designed separately. Wastewater is collected and treated in our university's biological treatment plant with a capacity of 900 m^3/day. Rain water is collected from the campus by taking it into a separate channel. Treated water and collected rain water are combined in the same channel. Afterwards, it is fed into the stream passing through Değirmendere locality under Gülümbe village at a distance of 2.3 km.

Rainwater on the roof of our university's waste storage area is collected in a 1m^3 tank placed here. The rain water collected in the tank is used to meet the need for surface washing. A 1 m^3 tank was placed. The tank storage area is filled with rain water coming from the roof and is used for surface washing.

Studies on the more effective use of treated water and rain water are ongoing, and these issues

4.2. Water Efficient Appliances Usage

[1] Waterless urinal application	[2]Photocell faucet application

	
[3] The amount of water flowing in 9 seconds (approximately 1100 mL) without the saving device	[4] The amount of water flowing in 9 seconds with the saving device (approximately 540 mL)
Example of Water Efficient Appliances Usage	

[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) [1].

[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.
[3,4] Another application for water saving is the application of saving apparatus to the taps. 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 apparatus were installed fully in 2 buildings all toilets.

[1] https://www.susuzpisuvar.com.tr/sayfa-detay/Susuz-Pisuvar.html?gclid=Cj0KCQjw5JSLBhCxARIsAHgO2Sctc5eQP5PINthhpdDEa83aGMGvTkCz31h8BTdMT5JsMgP-q-X3qP8aAjAwEALw_wcB

4.4. Consumption of treated water

Car washing	Surface washing
Irrigation	siphon water
Planned alternatives for the use of treated water **(İmplementations 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. Water pollution control in campus area

As a policy at our university, all wastewater is collected and treated separately. In this context, the necessary infrastructure is available. As a matter of fact, the treatment of wastewater in Turkey is a legal obligation and an obligation arising from the laws of the country.

According to the Water Pollution and Control Regulation (Official Gazette Date and Number: 31.12.2014; 25687) issued by the Ministry of Environment, Urbanization and Climate Change, which is valid in our country, our university is evaluated according to the criteria of Table 21.2-Sector: Domestic Wastewater.

Biological Wastewater treatment plant with 900 m^3 /day capacity

In the infrastructure of our university, rain water and wastewater infrastructure were designed separately. All of the wastewater originated form our campus 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 after treatment. Afterwards, it is fed into the stream passing through Değirmendere locality under Gülümbe village at a distance of 2.3 km.
Wastewater samples are taken from the facility by accredited measurement and analysis laboratories in the process deemed appropriate by the Ministry within the scope of legal legislation. In the sample taken, pH, TSS COD and BOD parameters are analyzed and the results of the analysis are reported to the Ministry.

5. Transportation (TR)

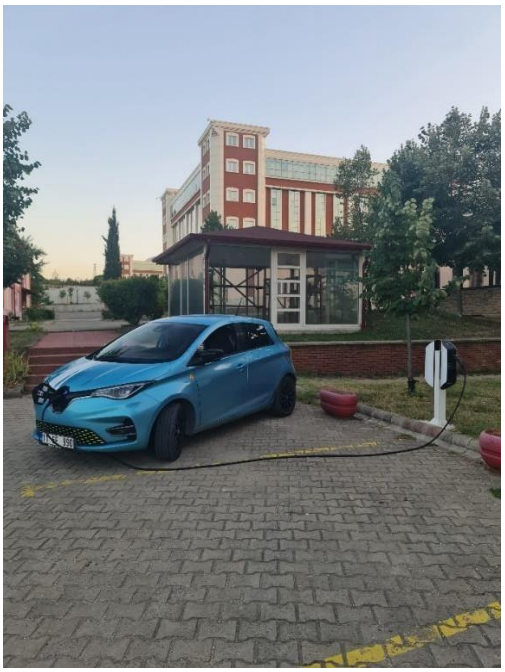
Since the central campus area is flat and small, the distance between the campus entrance and the farthest building is 670.35 meters. This is walking distance. Therefore, the campus is not suitable for using the shuttle.

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)

Example of sidewalks and bike paths[1]

Example of Campus Bikes[2]



dual AC charging point and sample electrical vehicles[3]

Toyota CHR Hybrid vehicle was donated by TOYOTA Motor Turkey A.Ş[4]

[1]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.

[2]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.

[3]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.

[4]1 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.

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	21
2	Cars entering the university	600
3	Motorcycles entering the university	27
	Total	**648**

5.4 = 648 / 22162 (population) = 0.0292

Example of Ratio of Parking Area to Total Campus Area (Bilecik Seyh Edebali University, Bilecik)

Total main campus area: 468025 m^2
Total parking area = 18000 m^2
Ratio = 3.84%
This year, 1 parking area (pointed with red block in the Picture and the area is approximately 776 m^2) was removed and a student cafeteria was built instead. Thus, the parking space is reduced.

Limiting parking zone (Bilecik Seyh Edebali University, Turkey)

Public transportation (Bilecik Seyh Edebali University, Turkey)

- Limiting parking zone for students as done new campus enter gate. After this park is full, student vehicles are taken into the campus.
- Not taking public transportation vehicles to campus in order to reduce vehicles on campus
- This year, 1 parking area (pointed with red block in the Picture and the area is approximately 776 m^2) was removed and a student cafeteria was built instead. Thus, the parking space is reduced.

Example of pedestrian path (Bilecik Seyh Edebali University, Turkey)

- 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.

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.

Total number of courses offered in 2024 = **4154** courses (not modules)

A total of 36 projects were supported in our university in 2021. The total support given by the university for these projects is US$ 108108. 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 2022 continues, no reporting has been made yet. For this reason, the data for 2022 will be included later.

Total research fund dedicated to sustainability research in 2022 = 33917 US Dollars
Total research fund dedicated to sustainability research in 2023 = 35315 US Dollars
Total research fund dedicated to sustainability research in 2024 = **34227** US Dollars

The averaged annum last 3 years of research fund dedicated to sustainability research = **34486** US Dollars

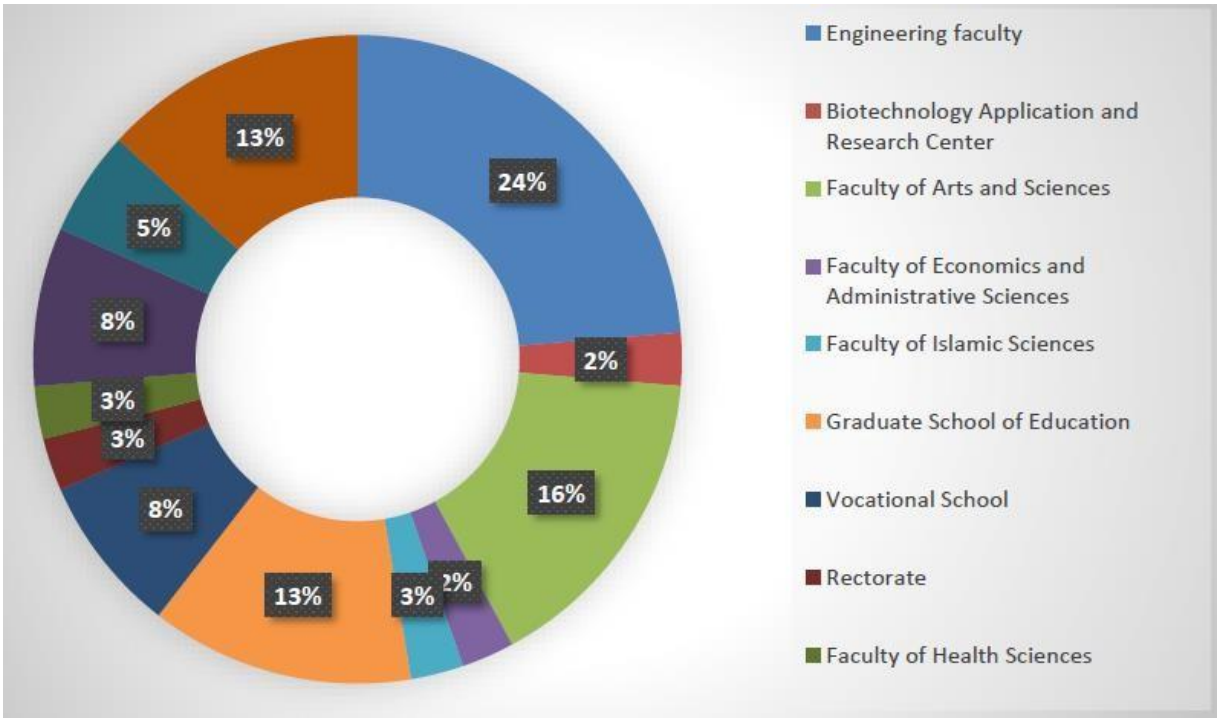
More over research funding in the Annual report
http://w3.bilecik.edu.tr/yesilkampus/faaliyetler/surdurulebilirlik-raporlari/

RAPOR DÖNEMİ :				2024 YILI					
PROJE TÜRÜ :				BŞEÜ. BİLİMSEL ARAŞTIRMA PROJELERİ KOORDİNATÖRLÜĞÜ PROJE HARCAMALARI RAPORU					
SIRA NO	PROJE ID	PROJE NO	PROJE ADI	PROJE TÜRÜ	FAKÜLTE / BÖLÜM	PROJE YÜRÜTÜCÜSÜ	SÖZLEŞME BAŞLANGIÇ TARİHİ	SÖZLEŞME BİTİŞ TARİHİ	PROJE BÜTÇESİ
1	522	TEZ-D-2024-522	[redacted]	Tez Projesi, Doktora	Fen ve Mühendislik	[redacted]	15.03.2024	15.09.2026	19.930,00
2	544	TEZ-D-2024-544	[redacted]	Tez Projesi, Doktora	Fen ve Mühendislik	[redacted]	15.03.2024	15.09.2026	19.999,20
3	509	TEZ-Y-2024-509	[redacted]	Tez Projesi, Yüksek Lisans	Fen ve Mühendislik	[redacted]	15.03.2024	17.03.2025	15.000,00
4	531	TEZ-Y-2024-531	[redacted]	Tez Projesi, Yüksek Lisans	Fen ve Mühendislik	[redacted]	15.03.2024	17.03.2025	467,50
5	508	GAP-2024-508	[redacted]	Genel Amaçlı Proje	Mühendislik Fakültesi İnşaat Mühendisliği Böl.	[redacted]	15.03.2024	15.09.2026	39.960,00
6	530	GAP-2024-530	[redacted]	Genel Amaçlı Projeler	Mühendislik Fakültesi İnşaat Mühendisliği Böl.	[redacted]	15.03.2024	16.03.2026	24.960,00
			MeSBA-15 Katalizörlerinin Biyokütle Pirolizi		Mühendislik Fakültesi Kimya				
53	608	GAP-2024-608	[redacted]	Genel Amaçlı Projeler Fen ve Mühendislik	Sağlık Hizmetleri Meslek Yüksekokulu, Tıbbi Hizmetler Ve Teknikler - Fen ve Mühendislik Bilimleri	[redacted]	19.09.2024	19.09.2025	39.928,00
54	607	GAP-2024-607	[redacted]	Genel Amaçlı Projeler / Tıp Sağlık	Sağlık Hizmetleri Meslek Yüksekokulu, Eczane Hizmetleri	[redacted]	22.10.2024	22.10.2025	39.843,05
55	588	ÖNAP-2024-588	[redacted]	Çok Disiplinli Öncelikli Alan Araştırma Projeleri	REKTÖRLÜK, Organik Kimya - Fen ve Mühendislik	[redacted]	11.09.2024	11.03.2027	62.933,76
56	578	GAP-2024-578	[redacted]	Genel Amaçlı Projeler Fen ve Mühendislik	REKTÖRLÜK, Yaşam Bilimleri	[redacted]	10.10.2024	10.10.2025	63.998,88
TOPLAM HARCAMA									2.239.183,57

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

Total research fund dedicated to sustainability research in 2022 = 33917 US Dollars
Total research fund dedicated to sustainability research in 2023 = 35315 US Dollars
Total research fund dedicated to sustainability research in 2024 = **34227** US Dollars

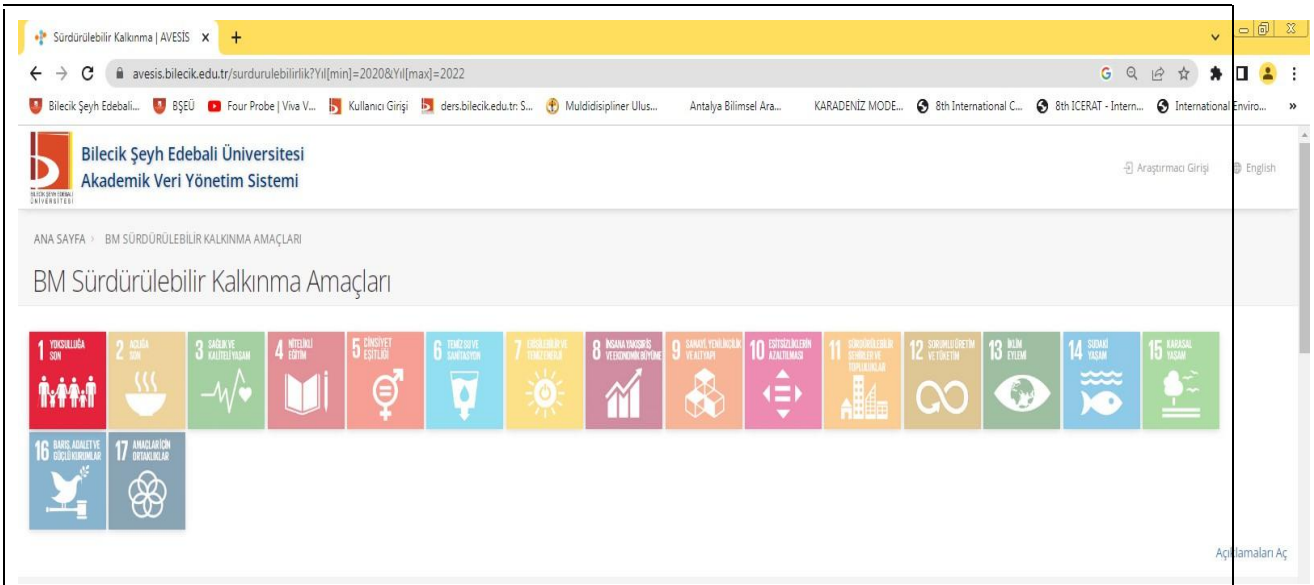
The averaged annum last 3 years of research fund dedicated to sustainability research = **34486** US Dollars



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

Example of events scholarly publications on sustainability in the academic year 2020-2022.

A total average per annum over the last 3 years of 116 publications



Examples of scholarly publications on sustainability (Bilecik Seyh Edebali University, Turkey)

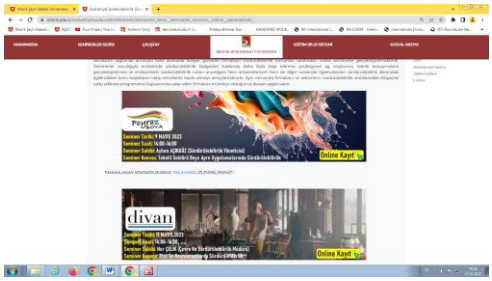
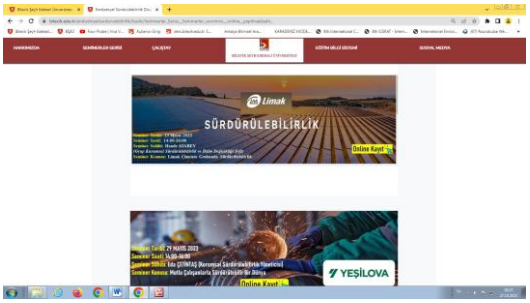
Example of events related to environment and sustainability hosted or organized by the University in the academic year 2022-2024.

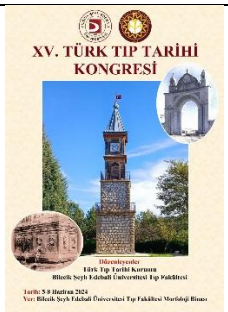
A total average per annum over the last 3 years of more than **10 events** (e.g. conferences, workshops, webinar, awareness raising, practical training, etc.).

More information can be found from web page : https://bilecik.edu.tr/endustriyelsurdurulebilirlik

Sustainability in the Chemical Industry (2024)	From Individual to Society: Social Sustainability at LC Waikiki (2024)
Aluminum Extrusion and Recycling (2024)	ALGAEBREW Project Meeting (2024)

Virtual Water Concept and Water Footprint (2024)	4th International Banking Congress (Digital Transformation and Sustainability) (2024)
Sustainable Water Management in Climate Change Perspective (2024)	The Search for Meaning in Sustainability (2024)
Carbon Trading in Türkiye-Developments in Carbon Trading in Türkiye will be evaluated through Banu Sınmaz Kırtman's narration. The session was held online on Wednesday, March 13, 2024.	Green Logistics Management Seminar- Prof. Dr. Eren Özceylan will address the European Green Deal and the border carbon adjustment mechanism, followed by information on green logistics management and the green logistics document. The session was held online on Thursday, January 11, 2024.
Sustainability and Good Practices in the Textile and Fashion Sectors. The Department of Industrial Sustainability held an online seminar	The Department of Industrial Sustainability held an online seminar titled "COP29 Impressions" on Friday, December 13, 2024, at 11:00 a.m. with

titled "Sustainability and Good Practices in the Textile and Fashion Sectors" on Monday, November 25, 2024, at 2:00 PM, with participants Halil İbrahim Cülfük, Fatih Kahraman, and Burak Arslan.	the participation of Environment and Sustainability Specialist Umay Yılmaz.
1st Industrial Sustainability and Green Transformation Workshop (2023)	1st Industrial Sustainability and Green Transformation Workshop (2023)
Industrial Sustainability Webinar series (2023)	Industrial Sustainability Webinar series (2023)
	
Industrial Sustainability Webinar series (2023)	Industrial Sustainability Webinar series (2023)

	
"Victory of the Nation Resisting with Sacrifice" Conference (2024)	XV. Turkish Medical History Congress (2024)
An Evaluation Seminar on the Historical Process of Turkish Literary Text Production (2024)	Hıdırellez Seminar in Turkish Culture (2024)
Games That Are About to Be Forgotten: Traditional Games Festival (2024)	Faculty of Humanities and Social Sciences Seminar Days "Bilecik Bahçelievler Excavation" (2024)
3nd Science Festival (2025)	Panel on Turkish Diplomacy from the Ottoman Empire to the Present Day in the 100th Anniversary of the Republic (2024)

Erasmus Activities Promotion Meeting (2023)

Siyer-i Nebi Knowledge Competition (2023)

2nd BŞEÜ Model Aircraft Manufacturing Day (2023)

The Epic That Never Goes Out of History: Çanakkale" Conference (2023)

Women's cooperatives and associations in rural development of our province (2021)

The role of chambers of agriculture in the development of agriculture and animal husbandry
in our province (2021)

World environment day event. environment and zero waste (2021)

Zero waste information presentation (2021)

Nursing during the pandemic (2021)	Protect water and health on world water day (2021)

4. Sportif Faaliyetler

Examples of activities organized by student organizations related to sustainability (Bilecik Seyh Edebali University, Türkiye)

Examples of activities organized by student organizations related to sustainability (Bilecik Seyh Edebali University, Türkiye)

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

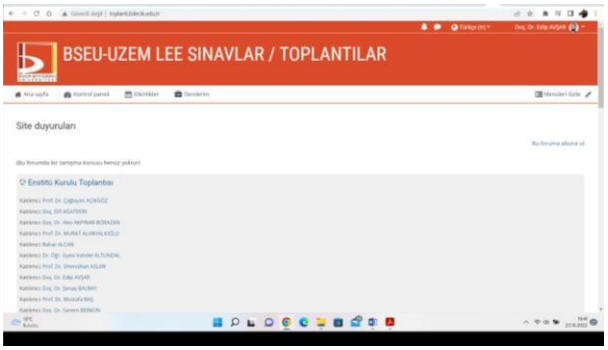
file:///Users/apple/Desktop/Yap%C4%B1lacak%20I%CC%87s%CC%A7ler/Yes%CC%A7il%20Kampu%CC%88s/Kriter%20dosyalar%C4%B1/Aktif-Kulu%CC%88pler-2019-web.pdf
-http://www.bilecik.edu.tr/AnaSayfa/Icerik/8411
-http://www.bilecik.edu.tr/AnaSayfa/Icerik/8418
-http://www.bilecik.edu.tr/AnaSayfa/Icerik/8417

Total number **cultural activities on campus** organized by the University : more than 3 **events (27 events)**

Additional evidence link (e.g. for videos, more images, or other files that are not included in this file):

More information can be found from web page : https://www.bilecik.edu.tr/main/arama/2

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



Remote meeting platform (http://toplanti.bilecik.edu.tr/)
(Bilecik Seyh Edebali University, Turkey)

Additional evidence link (e.g. for videos, more images, or other files that are not included in this file):

-http://w3.bilecik.edu.tr/ue/
-http://toplanti.bilecik.edu.tr/
-https://www.youtube.com/c/SigortaStrateji

❖ Startups

Sustainability-related startups

No.	Information
1	**Startup name:** Recovery of treatment plant water **Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): WR** **URL:** **Description:**

START-UP-01

Start-up Name:	Recovery of treatment plant water	**Responsible:**	
Problem Detection:		**Leader:**	Asos. Dr. Edip Avşar
A total of 350 m^3/day of treated water is discharged daily from our wastewater treatment plant, which was established in 2019. It aims to save domestic water by using the discharge water for irrigation purposes within the campus.		**Team Members:**	Eng. Faruk Ünlü, Asist. Dr. Adem Sarıhan, Asos. Dr. Şenay Balbay
Project Purpose and Scope:		**Goal and Benefits:**	
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.		1- Discharge water will be recovered at a rate of 5%. 2- Water footprint will be reduced. 3- The cost of well water will be reduced by 1%.	
		Cost:	calculating
		Earning:	calculating

Activity Steps:	**Task/Activity**	**Start**	**End**	**Actual**
1- Expanding and updating analysis parameters	**Planning**	1.9.21	1.6.22	10 Months
2- Determining and supplying the equipment	**Preparation**	1.1.22	1.6.22	6 Months
3-Integration of the filtration system into the treatment system	**Pilot Application**	1.6.22	1.6.23	12 Months
4- Determination of usability by examining the quality of the filtered water	**Spread**	1.6.23	1.6.24	12 Months
5- Use of water in line with the determined purposes				

Photos:

2	**Startup name:** Collection and evaluation of rainwater **Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED):** WR **URL:** **Description:**

START-UP-02

Start-up Name:	Collection and evaluation of rainwater	**Responsible:**			
Problem Detection:		**Leader:**	Asos. Dr. Edip Avşar		
The water requirement in our campus is met from groundwater. Problems that		**Team Members:**	Eng. Faruk Ünlü, Asist. Dr. Adem Sarıhan,		
may occur by using rain water will be prevented in case the water table drops		Asos. Dr. Şenay Balbay			
due to excessive withdrawal of groundwater.					
Project Purpose and Scope:		**Goal and Benefits:**			
It is aimed to reduce the amount of groundwater use by harvesting rainwater.		1- Using 100% of rain water			
Determining the rain water potential, determining the water quality and		2- Contributing to the solution of water scarcity			
determining the irrigation water usage rate are the scope of the project.		3- Water footprint reduction			
		4- Reducing the amount of groundwater use by 10%			
		Cost:	calculating		
		Earning:	calculating		
Activity Steps:		**Task/Activity**	**Start**	**End**	**Actual**
1- Storing rainwater by simple filtration		**Planning**	1.12.21	1.3.22	4 Months
2- Determination of the quality of rain water		**Preparation**	1.1.22	1.3.22	3 Months
3- Determination of the amount of collection in rain water		**Pilot Application**	1.3.22	1.6.23	15 Months
4- Ensuring the use of rain water as irrigation water		**Spread**	1.9.23	1.6.24	21 Months

Photos:

3

Startup name: Improvement of pet shelters on campus

Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI

URL:

Description:

START-UP-03

Start-up Name:	Improvement of pet shelters on campus	**Responsible:**			
Problem Detection:		**Leader:**	Asist. Dr. Adem Sarıhan		
Our campus is a natural habitat for cats, dogs, squirrels and various bird		**Team Members:**	Technician Meral Yurt		
species. It has been determined that the living and feeding areas of these		Asos. Dr. Şenay Balbay, Asos. Dr. Edip Avşar			
animals in the campus are inadequate and not in accordance with the standards.					
Project Purpose and Scope:		**Goal and Benefits:**			
It is aimed to make the housing and feeding environments that are not suitable		1- Maintaining the health of the animal population			
for the living standards of the animals adequate and optimum. The scope of		2- Raising awareness and raising awareness of people			
the project is to determine suitable feeding points, to create and control					
feeding environments.		**Cost:**	calculating		
		Earning:	calculating		
Activity Steps:		**Task/Activity**	**Start**	**End**	**Actual**
1- Determination of nutrition points and determination of needs		**Planning**	1.11.21	1.2.22	4 Months
2- Procurement of necessary materials		**Preparation**	1.2.22	1.7.22	6 Months
3- Establishing feeding places by separating environments according to		**Pilot Application**	1.8.22	1.11.22	4 Months
animal species		**Spread**	1.12.22	1.7.23	19 Months
4- Health control and vaccinations					

Photos:

4

Startup name: Increasing the use of energy efficient LED lamps
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): EC
URL:
Description:

START-UP-04

Start-up Name:	Increasing the use of energy efficient LED lamps	**Responsible:**	
Problem Detection:		**Leader:**	Eng. Harun Çınar
It is to reduce energy consumption by replacing the lighting in existing buildings		**Team Members:**	Eng. Özgür Çevik, Asist. Dr. Adem Sarıhan
in our university with LED systems that consume less energy.			Asos. Dr. Şenay Balbay, Asos. Dr. Edip Avşar
Project Purpose and Scope:		**Goal and Benefits:**	
The aim of the project is to reduce the electricity consumption of our university.		1- Starting from the pilot buildings and applying it to other buildings	
In this context, the rectorate and library buildings were selected for the pilot		2-Reducing electricity consumption on campus	
application. The scope of the project consists of making the lighting more		3-Longer life of the lighting system	
ergonomic and reducing the cost of lighting by converting the lighting system		4- Reducing the amount of waste lighting	
to LED (36 W) in buildings.		**Cost:**	3500 $
		Earning:	Saving 162500W/year, aprox. 5000 $

Activity Steps:	**Task/Activity**	**Start**	**End**	**Actual**
1-Making measurements in buildings	**Planning**	1.8.21	1.2.22	6 Months
2-Preparation of the business plan	**Preparation**	1.2.22	1.2.23	12 Months
3-Procurement of products	**Pilot Application**	1.2.23	1.2.24	12 Months
4- Changing the luminaires	**Spread**	1.2.24	1.2.25	12 Months

Photos:

5

Startup name: Dissemination of ecological fonts
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): ED
URL:
Description:

START-UP-05

Start-up Name:	Dissemination of ecological fonts	**Responsible:**	
Problem Detection:		**Leader:**	Instructor Dr. Secil Demiray,
In our university, exams are held in order to evaluate the knowledge of the		**Team Members:**	Asist. Dr. Adem Sarıhan
students.Most paper and toner usage occurs in exams.		Asos. Dr. Şenay Balbay, Asos. Dr. Edip Avşar	
Exam questions are given to the students in hard copy.			
Project Purpose and Scope:		**Goal and Benefits:**	
It is aimed to reduce the amount of paper and toner used in student information		1- Saving about 10% in toner usage	
evaluation at our university.The scope of the study is to provide savings in paper		2- Saving about 5% in paper usage	
and toner usage by using ecofont software in the unit		3- Raising awareness of people by raising awareness	
where the exam papers are printed.			
		Cost:	No cost or 10-15 $
		Earning:	At least 10% toner and 5% paper

Activity Steps:	**Task/Activity**	**Start**	**End**	**Actual**
1- Conducting surveys on students and staff	**Planning**	1.1.22	1.1.23	12 Months
2- Preparing with the exam questions printing unit	**Preparation**	1.1.23	1.1.24	12 Months
3- Performing the printing processes	**Pilot Application**	1.1.25	1.1.26	12 Months
	Spread	1.1.26	1.1.27	12 Months

Photos:

6

Startup name: Reducing the use of single-use plastic materials

Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): WS

URL:

Description:

START-UP-06

Start-up Name:	Reducing the use of single-use plastic materials	**Responsible:**	
Problem Detection:		**Leader:**	Asos. Dr. Edip Avşar
It is the reduction of disposable plastic cups used extensively by staff		**Team Members:**	Asist. Dr. Adem Sarıhan
and students on campus.		Asos. Dr. Şenay Balbay, Instructor Dr. Secil Demiray	
Project Purpose and Scope:		**Goal and Benefits:**	
The aim of the study is to reduce the use of plastic cups by staff and students,		1-Reducing the amount of plastic waste originating from the campus	
to raise awareness about this issue and to make it a way of life.		2-raising awareness about the environmental damage of plastics	
		3-recovery of used glass	
		4-raising awareness of the zero waste system	
		Cost:	3000 $ (7000 glass cups)
		Earning: The plastic waste will be reduced. Used glass will be recycle	

Activity Steps:	**Task/Activity**	**Start**	**End**	**Actual**
1- Meeting with the company and determining the activity steps	**Planning**	1.10.21	1.10.22	12 Months
2-Preparation of necessary visual materials	**Preparation**	1.10.22	1.10.23	12 Months
3-Provision of promotional materials	**Pilot Application**	1.10.23	1.10.24	12 Months
4-Installing the stand	**Spread**	1.10.24	1.10.25	12 Months
5-The realization of the activity				

Photos:

7

Startup name: Raising awareness by collecting plastic caps
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): WS, ED
URL:
Description:

START-UP-07

Start-up Name:	Raising awareness by collecting plastic caps	**Responsible:**			
Problem Detection:		**Leader:**	Asos. Dr. Edip Avşar		
The aim of the ongoing zero waste project in Turkey is to raise awareness		**Team Members:**	Technician Hüseyin Temel, Asist. Dr. Adem Sarıhan		
for plastic waste in our university.		Asos. Dr. Şenay Balbay			
Project Purpose and Scope:		**Goal and Benefits:**			
The aim of the project is to disseminate zero waste practices in the university,		1- Providing wheelchairs within the scope of social responsibility			
to increase awareness and to realize social responsibility projects.		2- Raising awareness about the zero waste project			
For this purpose, plastic bottle caps will be collected and wheelchairs will be		3- Ensuring waste disposal without harming the environment			
provided for those in need.		4- Increasing awareness of green campus studies			
		Cost:	No cost		
		Earning:	A wheelchair		
Activity Steps:		**Task/Activity**	**Start**	**End**	**Actual**
1- Making plastic cap collection announcements		**Planning**	6.1.00	1.7.21	1 Months
2- Collection of caps by club members at one point		**Preparation**	1.7.21	1.9.21	2 Months
3- Taking the collected covers to the wheelchair change point		**Pilot Application**	1.9.21	1.9.22	12 Months
4- Delivering the wheelchair to the needy		**Spread**	1.9.22	1.9.23	12 Months

Photos:

8

Startup name: Raising awareness by collecting waste oils
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): WS, ED
URL:
Description:

START-UP-08

Start-up Name:	Raising awareness by collecting waste oils	**Responsible:**			
Problem Detection:		**Leader:**	Asos. Dr. Edip Avşar		
The aim of the ongoing zero waste project in Turkey is to raise awareness in		**Team Members:**	Asist. Dr. Adem Sarıhan		
our university for waste oils.		Asos. Dr. Şenay Balbay			
Project Purpose and Scope:		**Goal and Benefits:**			
The aim of the project is to disseminate zero waste practices in the university,		1- Raising awareness about the zero waste project			
to increase awareness and to realize social responsibility projects.		2- Ensuring the disposal of wastes without harming the environment			
For this purpose, waste oil will be collected and a budget will be provided		3- Providing financial financing for green campus studies			
for green campus studies.					
		Cost:	No cost		
		Earning:	Calculating		
Activity Steps:		**Task/Activity**	**Start**	**End**	**Actual**
1- Making agreements with the waste oil collector company		**Planning**	1.9.21	1.6.22	10 Months
2- Announcement of waste oil collection at the university		**Preparation**	1.1.22	1.6.22	6 Months
3- Collection of waste oils		**Pilot Application**	1.6.22	1.6.23	12 Months
4- Delivery of the collected oils to the waste oil collector		**Spread**	1.6.23	1.6.24	12 Months

Photos:

9

Start-up Name: Reducing the energy consumption of facade lighting

START-UP-09

Start-up Name:	Reducing the energy consumption of facade lighting	**Responsible:**			
Problem Detection:		**Leader:**	Assoc. Dr. Edip Avşar		
A total of 108 wall washer fixtures are used in Bilecik Şeyh Edebali University. The power consumption of each luminaire is 65 watts. Considering that the system operates for 4380 hours per year, its annual consumption is 30,747.6 kW/hour.		**Team Members:**	Eng. Harun CINAR, Assoc. Prof. Adem SARIHAN		
Project Purpose and Scope:		**Goal and Benefits:**			
In order to save energy, the luminaires will be disassembled and replaced with luminaires corresponding to the facades of the buildings. There are 24 luminaires, 12+12, on the front of the building. In its new state, when it is predicted that the system operates for 4380 hours a year, there will be a consumption of 3,784.32 kW/hour per year. The amount of energy savings to be achieved in a year as a result of the change is 26,963,28 kW/hour.		1- Electricity consumption will decrease approximately 90%. 2- Carbon footprint will decrease 3- Depreciation period is calculated as 548 hours (1.5 months)			
		Cost:	808 $		
		Earning:	6468.28 $ (for 1 month)		
Activity Steps:		**Task/Activity**	**Start**	**End**	**Actual**
1- Disassembly of materials		**Planning**	1.11.22	1.6.23	7 Months
2- Supply and installation of new materials		**Preparation**	1.6.23	1.12.23	6 Months
3- Commissioning the system		**Application**	1.12.23	1.6.24	7 Months

Photos:

10

Start-up Name: Separate collection of electrical and electronic wastes of students and staff on campus

START-UP-10

Start-up Name:	Separate collection of electrical and electronic wastes of students an	**Responsible:**			
Problem Detection:		**Leader:**	Assoc. Dr. Edip Avşar		
Collecting and recycling electrical and electronic wastes from the homes of students and staff outside the university		**Team Members:**	Eng. Harun CINAR, Assoc. Prof. Adem SARIHAN		
Project Purpose and Scope:		**Goal and Benefits:**			
The bulbs and fluorescents used in our university, and electrical and electronic wastes are collected separately on campus: however, there is no such order in our city. For this reason, it is aimed to bring these wastes generated in the homes of the staff and students to the school and ensure their recycling.		1- Collection of household waste outside of school and disposal in an environmentally friendly manner.			
		2- Income from wastes other than fluorescent and light bulbs			
		3- Using the income obtained in other activities that will increase recycling			
		Cost:	0 $ (Necessary materials will be obtained from AGID association)		
		Earning:	500 $ (electricity will be earned from the sale of electronic waste)		
Activity Steps:		**Task/Activity**	**Start**	**End**	**Actual**
1- Preparation and announcement of the project		**Planning**	1.11.22	1.6.23	7 Months
2-Reviewing the boxes in the units, completing the deficiencies		**Preparation**	1.6.23	1.12.23	6 Months
3-Collection of waste and sending it to contracted companies for recycling		**Application**	1.12.23	1.6.24	7 Months

Photos:

11

Start-up Name: Reducing carbon footprint by increasing combustion efficiency in university boilers

START-UP-11

Start-up Name:	Reducing carbon footprint by increasing combustion efficiency in university boilers	**Responsible:**			
Problem Detection:		**Leader:**	Assoc. Dr. Edip Avşar		
There is fuel consumption in the boilers of our university for heating purposes. When boilers do not burn efficiently, fuel consumption and carbon footprint increase.		**Team Members:**	Eng. Faruk ÜNLÜ, Lecturer Seher SARI, Eng. Veli ARSLAN		
Project Purpose and Scope:		**Goal and Benefits:**			
The aim of the project is to regularly monitor combustion efficiency by regular flue gas measurements in boilers. In this context, the factors that may cause low efficiency will be determined and the boilers will be burned more efficiently. Thus, fuel consumption and heating costs will decrease. In addition, air quality modeling will be made with the data obtained, and the effect of heating activities on campus air quality will be investigated.		1- Kazanlar daha verimli yanacaktır			
		2- Karbon ayakizi azalacaktır			
		3- Yakıt miktarı azalacak, kampüs hava kalitesi artacaktır			
		Cost:	1100 $		
		Earning:	10000 $ (for 1 year)		
Activity Steps:		**Task/Activity**	**Start**	**End**	**Actual**
1- Supply of necessary materials and air quality modeling program		**Planning**	1.11.22	1.6.23	7 Months
2-Maintenance and calibration of the flue gas measurement device		**Preparation**	1.6.23	1.12.23	6 Months
3-Measurement, data acquisition and modeling work		**Application**	1.12.23	1.6.24	7 Months
4-Interpreting the obtained data, detecting the faults and applying corrective and preventive measures					

Photos: