

## Energy wastage, 2020



JAN,01-2020 - PRESENT

Mutah University



## Mutah University,

Mutah University is located in the town of Mutah in the Karak Governorate, 135 km south of the Jordanian capital Amman and 12 km from the ancient Karak Castle. The university was established by royal decree in 1981, and it is a two-pronged university, civil and military. The military wing began its work in 1984, and in 1986 the Council of Higher Education decided to establish a civilian wing in it.

The area of the university in its main site is 400 acres, 15 colleges, including 7 scientific colleges: science, engineering, medicine, pharmacy and nursing, and 7 humanities colleges: public arts, law, Sharia, educational sciences, sports sciences and a college for graduate studies, in addition to two deanships, namely: the Deanship of Scientific Research, and the Deanship of Student Affairs, and the university offers 105 academic programs, including 53 programs at the bachelor's level, 42 programs at the master's level, 9 programs at the doctoral level, and one program at the higher diploma level.

***Toward  
"Green University-Surplus Energy University"***

Mutah University is making many changes and procedures that ensure the rationalization of energy consumption within the university campus through all its operating units. The university has adopted many monitoring stations through a group of executive arms inside it to identify the high energy wastage. The table below shows the amount of the diesel oil used in the University campus during 2020 and 2021. It is clear that the amount of the used oil was reduced sharply through the plans that was developed for the goal of transforming toward the Green University.

<b>Amount of Diesels oil Used in the University campus (Liter)</b>			
<b>Buildings name</b>	<b>2019</b>	<b>2020</b>	<b>Notes</b>
Presidency Buildings	2788	1501	
Engineering faculty	55140	34286	
Science faculty	15362	8753	
Nursing faculty	13139	7013	
Arts faculty	9830	5023	
Business faculty	12860	5001	
Law faculty	8005	4532	
Social science faculty	9678	4253	
Sharia faculty	7116	3115	
Educational science faculty	8527	4329	
Sports science faculty	102436	51265	
Medicine faculty	33131	20015	
Pharmacy faculty	13925	7621	
Information technology faculty	12053	7459	
Agriculture faculty	35132	20148	
Teaching halls complex	100524	69856	
Service buildings	53203	35687	
<b>Total</b>	<b>492849</b>	<b>289857</b>	
<b>Co<sub>2</sub> in tonnes</b>	<b>1345</b>	<b>791</b>	
<b>Energy content (GJ)</b>	<b>18,925.40</b>	<b>11,130.51</b>	

Mutah University take some action to reduce the use of traditional energy such as:

- Mutah University secures all of its electrical power needs by using photovoltaic cells.

- Mutah University uses electric vehicles instead of traditional vehicles and it is forbidden to use conventional vehicles inside the university campus.
- Mutah University has replaced the entire traditional lighting units with energy-saving lighting units.
- Mutah University performs periodic maintenance according to a settings control program to control fuel amounts.

Bellow the analysis of each University Building:

Presidency Buildings						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	46%
2788	7.58	107	1501	4	58	

Engineering faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	27%
55140	150	2117	34286	93	1316	

Science faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	38%
15362	42	590	8753			

Nursing faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	47%
13139	36	505	7013	19	269	

Arts faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	50%
9830	27	377	5023	14	193	

Business faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	61%
12860	35	494	5001	13.6	192	

Law faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	43%
8005	22	307	4532	12	174	

Social science faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	56%
9678	26	372	4253	11.5	163	

Sharia faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	56%
7116	19	273	3115	8.5	120	

Educational science faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	49%
8527	23	327	4329	12	166	

Sports science faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	50%
102436	278	3933	51265	139	1968	

Medicine faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	40%
33131	90	1272	20015	54	769	

Pharmacy faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	45%
13925	38	534	7621	21	193	

Information technology faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	38%
12053	33	462	7459	20	268	

Agriculture faculty						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	43%
35132	96	1349	20148	55	774	

Teaching halls complex						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	30.5%
100524	273	3860	69856	190	2682	

Service buildings						
2019			2020			Reduction Percent
Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	Diesel Amount in Liter	Co <sub>2</sub> in Tonnes	Energy content (GJ)	33%
53203	145	2043	35687	97	1370	

Within the framework of the strategic plan of Mutah University, the university has taken upon itself to adopt the transformation in the university from an energy-consuming university to an energy-producing and environment-friendly university.

The transformation of University campus to energy-saving, high-efficiency campus has been started since 2018 until now

