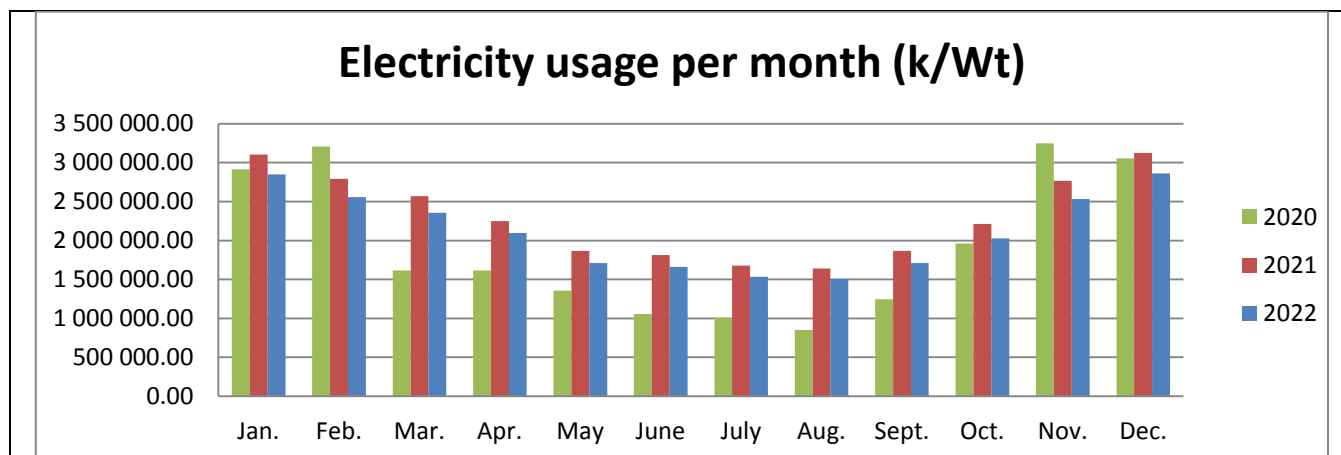


SibFU energy efficiency report, 2023

Electricity Usage per Year (in Kilowatt hour)



Electricity usage per month (kWh) on SibFU main campus



Goals:

- Improving SibFU technological safety;
- Reducing the energy consumption by the university by introducing energy-saving technologies;
- Improving energy measuring.

Objectives:

- To determine energy-saving potential of the university;
- To develop a program of energy-saving measures at SibFU for the near future;
- Installation of water, heat and electricity metering devices in the buildings, optimization of operating modes of heat and water supply systems through the introduction of automatic control systems;
- To modernize lighting systems by implementing energy-efficient lighting.

The program of actions for resource conservation in Siberian Federal University for 2020-2024

Since 2021, Siberian Federal University has been implementing a new university development program created within the framework of the federal program "Priority 2030". Its goal is to make the university the center of education and science of the Yenisei macroregion, which includes the Krasnoyarsk Region, Khakassia and the Republic of Tuva.

One of the priority objectives of the program is the creation of a Center for Low-Carbon Development and Climate Policy at the university. This will allow Siberian Federal University not only to speed up and improve the quality of research related to global climate change and the creation of new materials and technologies with a low or zero carbon footprint, but also to make the university campus an experimental platform for testing new developments in real conditions. It will also contribute to achieve



Программа развития университета на 2021–2030 годы
в рамках реализации программы стратегического академического
лидерства
«Приоритет–2030»

the national development goal of the Russian Federation “Housing and the urban environment” through the implementation of urban development projects on campus aimed at increasing the comfort of the urban environment and improving public spaces , greening of basic life processes.

The campus policy will allow SibFU to implement the target model as a regional service platform:

- organizing and supporting events of any level and status;
- managing the socially significant agenda of the region;
- cooperation with representatives of business, government, and the public;
- creating conditions for the development of citizen science;
- developing professional and amateur sports;
- supporting cultural and social programs and public initiatives.

площадкой для регулярного проведения федеральных и международных мероприятий: форумов, саммитов, съездов, чемпионатов;

– инфраструктурные и сервисные возможности кампуса адаптированы под потребности всех целевых групп;

– учебно-лабораторный и жилой фонд, соответствующий современным требованиям эргономики и безопасности;

– рост качества работы сферы услуг в кампусе (проживание, питание, транспорт, коммунальная и инженерная инфраструктура) и оптимизация расходов, связанных с его содержанием.

В рамках реализации кампусной политики вклад в достижение национальной цели развития Российской Федерации «Жилье и городская среда» будет достигаться за счёт реализации в кампусе проектов городского развития, направленных на повышение комфорта городской среды, благоустройство общественных пространств, экологизацию основных процессов жизнедеятельности.

Кампусная политика позволит СФУ реализовать целевую модель как региональную сервисную платформу: по организации и сопровождению событий любого уровня и статуса; управлению социально значимой повесткой региона; кооперации с представителями бизнеса, власти, общественности; созданию условий для развития гражданской науки; развитию профессионального и любительского спорта; поддержке культурно-социальных программ и общественных инициатив.

2.6. Система управления университетом

Текущая структура управления формировалась с учетом экономической,

Description:

The total electricity usage of Siberian Federal University in 2022 was 25406890.01 kWh.

Energy sources	Energy consumption	
	Total	Share
Hydropower	18247102	72%
Geothermal power	5676480	22%
Solar power	1471680	6%
Wind power	11628	1%

Total Carbon Footprint in 2023 (CO₂ emission in the last 12 months, in metric tons)

Option 2: Recommended by UI GreenMetric

CO₂ (electricity from hydropower station)*

25406890 kW / h = 25.407 GWh;

$$= \frac{25406890}{1000000} \times 8.14 = 25.407 \times 8.14 = 206.81 \text{ metric tons};$$

CO₂ (Shuttle)

$$\frac{55 \times 5 \times 0.47 \times 240}{100} \times 0.01 = 3.102 \text{ metric tons};$$

CO₂ (cars)

$$= \frac{400 \times 2 \times 0.47 \times 240}{100} \times 0.02 = 18.048 \text{ metric tons};$$

CO₂ (motorcycle)

$$\frac{0 \times 2 \times 0 \times 240}{100} \times 0.01 = 0 \text{ metric tons};$$

*There are no motorcycles on campus as the studying process starts when the motorcycles season closes

CO₂ (total)

$$= 206.81 + 3.102 + 18.048 = 227.96 \text{ metric tons};$$

Carbon footprint in 2022 = 227.96 metric tons.

Description:

*The carbon footprint of hydropower is about 8.14 tons of CO₂ equivalent per 1 GWh subject to the age of the hydroelectric power station (over 50 years). Krasnoyarsk hydropower station was built in 1972 and SibFU's partnership with power energy station is continuing to lead to 100% influence on low CO₂ emissions.

Despite of the fact, that the new renewable energy sources appeared in campus, their contribution is so small (as it is for educational purposes) there was a decision made not to include to the overall electricity consumption.

Additional evidence link: <https://www.mdpi.com/2071-1050/10/6/2018/pdf> (Carbon Footprint Assessment of Four Normal Size Hydropower Stations in China)