

**JLU**

NEUE WEGE. SEIT 1607.

JUSTUS-LIEBIG-



UNIVERSITÄT  
GIESSEN



**TIPS FOR  
SAVING ENERGY  
DURING WORK**

RELEVANCE AND AIM

## SAVING ENERGY AT JLU

As one of the largest institutions of the city Giessen and the region Central Hesse, JLU takes its special responsibility for the careful use of resources very seriously. Therefore, JLU initiated several robust, i.e. effective and perceptible, measures to considerably reduce the energy demand of the university.

***IN ADDITION TO CONSTRUCTIONAL AND TECHNICAL OPTIMIZATION MEASURES, USER BEHAVIOR IS OF DECISIVE IMPORTANCE.***

We can all contribute to saving resources by our individual behavior. Even small behavior changes can make a big difference.

The Sustainability Office has therefore compiled a selection of tips on how you personally can save energy in your everyday work.

For more information on saving energy, please visit the website of the Sustainability Office.





## HEATING AND AIR CONDITIONING

### **Adjust room temperature**

Regarding office activities, room temperatures of 20-21 °C are required. This corresponds usually to a heating thermostat level 3. After 6 p.m., during absence and beyond the operating hours, the heating thermostat level should be set to 1. Please do not set them to level 0 to ensure frost control.

### **Optimize ventilation**

Shock ventilation two or three times per day (5 to 10 minutes) instead of tilt ventilation provides fresh air and save energy. During this process, your heating element should be turned off so that heat is not unnecessarily lost.

### **Keep heating elements clear**

Please take care that heaters are not blocked or covered by furniture, claddings or curtains. This ensures that the heat can freely circulate in the room and is not retained.

### **Close the doors**

To keep the room temperature as constant as possible in winter, please close the doors.

### **Close shutters**

Please close the shutters and sunblinds or curtains in your office, especially during cold nights. Particularly for older windows, this substantially reduces the loss of heat and saves heating energy.

### **Use sunblinds**

In summer, the use of sunblinds prevents the building from heating up. This reduces the need for air conditioning.



## ELECTRICITY

### **Collect print jobs**

Printers need energy to raise their temperature. Therefore, try to execute several print jobs in a row instead of printing several single pages more often. The eco-mode saves energy, but also toner and ink. You can save further resources by using recycling paper and duplex print option.

### **Turn off devices and light**

When devices are not in use, they should be turned off and not left in stand-by mode. When leaving the room, and especially in the evening and before the weekend, please make sure that light and devices are turned off.

### **Use kitchen equipment efficiently**

Fill the kettle only with the amount of water you need. Use thermos mugs to keep your drinks warm. The dishwasher should be fully loaded and, if possible, run in the eco-mode or energy-saving program. The power consumption of freezers can be significantly reduced by regular defrosting.

### **Check your equipment stock**

Get an overview of your technical equipment and check for dispensable devices. If possible, discuss with your team and supervisor if you can share for example fridges or printers.

## ENERGY SAVING FACTS – PART 1

# DID YOU KNOW THAT...

... a room temperature increased by one degree requires about 6 % more energy for heating? <sup>1</sup>

... devices connected to a network (e.g. printers) are excluded from the EU regulation for maximum standby consumption of 0.5 watts? Consequently, they consume much more energy in standby mode. <sup>2</sup>

... during tilt ventilation, more than 25 % of the energy escapes through the windows without achieving efficient ventilation effects? <sup>3</sup>

... if you replace a functioning older notebook by a newer one, the savings in energy consumption are compensating the energy used for production only after decades of use? <sup>4</sup>

<sup>1</sup> Umweltbundesamt: Deutschland krisenfester und nachhaltiger machen (<https://www.umweltbundesamt.de/themen/deutschland-krisenfester-nachhaltiger-machen>). Letzter Zugriff: 22.09.2022.

<sup>2</sup> Verbraucherzentrale: Strom sparen im Haushalt: Einfache Tipps (<https://www.verbraucherzentrale.de/wissen/energie/strom-sparen/strom-sparen-im-haushalt-einfache-tipps-10734>). Letzter Zugriff: 22.09.2022.

<sup>3</sup> Post, M, Schmidt, P. Lohmeyers Praktische Bauphysik. Eine Einführung mit Berechnungsbeispielen. Wiesbaden: Springer Fachmedien, 2019.

<sup>4</sup> Umweltbundesamt: Produkte länger nutzen: Gewährleistung, Reparatur und Neukauf (<https://www.umweltbundesamt.de/umwelttipps-fuer-den-alltag/elektrogeraete/produkte-laenger-nutzen-gewaehrleistung-reparatur#unsere-tipps>). Letzter Zugriff: 22.09.2022



## MOBILITY

### **Use the stairs**

Use the stairs if possible and leave elevators to those who rely on them. This saves energy and provides some physical activity during your office hours.

### **Consider your way to work**

Use, if possible, the 'LandesTicket Hessen' and/or the bicycle for your way to work. If you need to commute regularly by car, carpooling may be a good option.

### **Check the necessity of business travel**

Consider whether business travel is really necessary or whether it can be replaced by digital alternatives.

### **Rent cargo bikes and e-bikes**

E-bikes can be rented at JLU for shorter business trips. Using a JLU cargo bike not only helps to transport yourself, but also to transport materials.

### **Consider mobile working**

The greater use of voluntary mobile working makes it easier to save energy concerning the commute to work. At the same time, voluntary mobile working makes it possible to combine workplaces and thus workspaces. As a result, fewer spaces need to be supplied with energy.



## PC USE

### **Adjust screen settings**

Lower the screen brightness and prefer the sleep or energy saving mode to the screen saver during short absence. Please do not forget to turn off external screens after turning off the PC.

### **Optimize internet research**

Bookmarking frequently visited web pages and saving contacts in your digital address book avoids the energy-intensive request of search engines. You can also use more climate friendly search engines.

### **Minimize email attachments**

If possible, avoid sending large email attachments. Alternatively, you can upload your file to a network drive (winfile) or the 'Hessenbox' and send the corresponding link.

### **Reduce webcam use**

Deactivating the webcam during videoconferences has high energy saving potential. You might, for example, deactivate the webcam after saying hello if you are not currently speaking. For conversations between two people, a phone call is a good option.

### **Question new procurements**

Use available devices as long as possible. Consider used devices, retrofit or repair before procuring new devices. Labels (e.g. Blue Angel, Energy Star, TCO-oriented) help to choose particularly energy-efficient devices.



## SYSTEMS ENGINEERING IN LABORATORIES

### **Use the manual operating unit**

In laboratories, there is a high energy demand regarding ventilation, air conditioning and heat, and thus a large saving potential. Please use the manual operating unit for the air ventilation if available. This allows you to adapt the operation of the room ventilation to your needs.

### **Adjust cooling capacity**

Depending on the use of the laboratory, adjust the cooling capacity by using the existing control system. If possible, refrain from using forced-air cooling. If the cooling demand is low, the capacity can be reduced during daytime operation and either reduced or switched off completely at night.

### **Switch off fume hoods**

Switch off fume hoods manually when not in use if you have access to the switches required. Please do not store chemicals in the fume hood longer than necessary, but place them in the designated hazardous materials cabinets with 24h exhaust air.



## ENERGY SAVING FACTS – PART 2

### DID YOU KNOW THAT...

... you can save about 1.5 kg of CO<sub>2</sub> on a 10 km bike trip compared to a 10 km car trip? <sup>1</sup>

... deactivating the webcam during videoconferences saves up approximately 96 % energy? <sup>2</sup>

... 20 Google searches consume about as much energy as an energy-saving lamp in one hour? <sup>3</sup>

... you can lower the heat loss at windows by 20 % if you use shutters and curtains? <sup>4</sup>

<sup>1</sup> Umweltbundesamt: Emissionsdaten ([https://www.umweltbundesamt.de/themen/verkehr-laerm/emissionsdaten#verkehrsmittelvergleich\\_personenverkehr\\_grafik](https://www.umweltbundesamt.de/themen/verkehr-laerm/emissionsdaten#verkehrsmittelvergleich_personenverkehr_grafik)). Letzter Zugriff: 22.09.2022.

<sup>2</sup> Obringer R, Rachunok B, Maia-Silva D, Arbabzadeh M, Nateghi R, Madani KM. The overlooked environmental footprint of increasing Internet use. *Resources, Conservation and Recycling*, 2021, 167, 105389.

<sup>3</sup> SWR: Weltweite Stromfresser (<https://www.swrfernsehen.de/landesschau-rp/gutzuwissen/stromfresser-digitalisierung-100.html>). Letzter Zugriff: 22.09.2022.

<sup>4</sup> Umweltbundesamt: Heizen, Raumtemperatur (<https://www.umweltbundesamt.de/umwelttipps-fuer-den-alltag/heizen-bauen/heizen-raumtemperatur#gewusst-wie>). Letzter Zugriff: 10.10.2022.

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