

Energy Conservation Recommendations

Buildings With Heating and Air Conditioning

Overview

NAU is committed to carbon neutrality by 2030, which means we are pursuing a balance between carbon emissions and carbon absorption on campus in order to reduce our contribution to climate change. As a member of the NAU community, you can help the university achieve this goal by *maximizing resource conservation and efficiency* and *cultivating a culture of sustainability on campus*.

This document is a practical tool intended to raise awareness in the NAU community about energy use on campus and provide recommendations for how we can use energy more efficiently in the buildings we occupy.

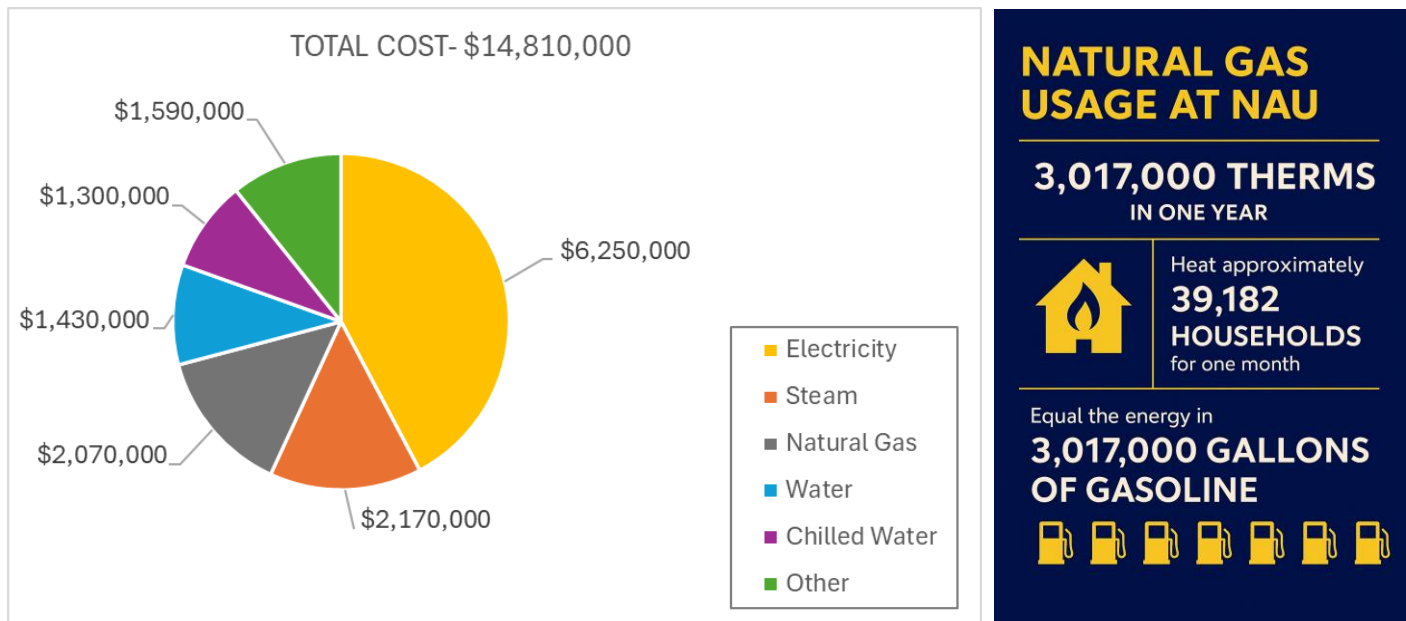
Energy Use at NAU

The two primary sources of energy at NAU include natural gas and electricity. Natural gas provides fuel for the two on-site power generation plants and many buildings at NAU. The primary purpose of natural gas is to provide heating and hot water to the buildings. Electricity (sourced from a mix of renewable energy and coal) provides the energy needed to power the buildings and generate cooling across campus. The systems in place that keep campus operational are complex but important to understand. See graphic.



NAU's largest utility cost is electricity. Electricity use is largely driven by the time of day when campus is busiest. Peak energy demand occurs every Tuesday and Thursday between 10AM to 2PM with the highest peak typically occurring around 2PM on Tuesday.

Each full-time employee at NAU uses about \$ 3,312 per year in utilities totaling \$ 14,810,000 per year.



Building Occupant Best Practices

These are behavioral recommendations for changes that building residents can make to improve energy efficiency at work. Although there are some larger structural changes to buildings that must be made by the university (such as repairing HVAC systems, improving window insulation, and switching to LED lighting), there are also many things you can do to reduce the energy consumption of the building you work in. Building occupants can affect building energy use through their interactions with a building's HVAC system, windows, lights, and electrical appliances. Researchers estimate that changing occupant behavior can increase building energy efficiency between 4 and 30%. Your actions might seem small individually, but collectively, we can make a difference!

Warm Weather Best Practices

- **Keep windows closed when the air conditioning is running.** Otherwise, you are letting the cold air escape and bringing warmer air into the building. This requires the AC to work harder to cool the building down, increasing the building's energy usage.

- **Close blinds, screens, and curtains when not in your office.** Window panes let in sunlight and heat in the summer. By using your window coverings, you can reduce the amount of heat that enters the building through the windows, making it easier for the AC to cool the building down.
- **Turn off unnecessary lights and appliances.** These generate heat and make it more difficult to keep the building cool.

Cold Weather Best Practices

- **Ditch the space heater!** Instead, dress in layers or bring a blanket to the office. Even a heated blanket uses 90% less energy than a space heater and is an excellent alternative. Not only do space heaters use a lot of energy, they are also safety hazards, with the potential to overload electrical circuits and increase the risk of fire. Space heaters can also trick temperature sensors into thinking that the building is warmer than it actually is, interfering with the building's heating system. If your heating is not working, submit a work order to get it repaired.
- **Open your blinds and curtains during the day.** This allows sunlight in through the windows, which can help to naturally heat the building.
- **Close windows and blinds at night.** Before you leave the office, make sure the windows and their coverings are closed, so that you can keep heat inside the building.
- **Bring blankets and sweaters to the office.** Make it your cozy home away from home and bring things to keep you warm, like blankets, sweaters, warm drinks, fuzzy socks, and electric blankets.

Year-Round Best Practices

- **Be a steward of NAU and report things that aren't working.** If the HVAC isn't working correctly, or the blinds are broken, or anything else is disrupting the energy efficiency of the building, report it! Use the [Work Request Portal](#) to let our staff know there is an issue. Provide as much detail as you can regarding location and the issue. You can attach a photo if needed.
- **Use centralized appliances.** Use the communal office refrigerators and microwaves, rather than keeping personal ones in your office. Use centralized printers rather than a personal printer in your office. Reducing the total number of appliances using energy in the building can reduce the building's energy load.
- **Power off/unplug devices when not in use.** Many electronic devices still use "vampire energy" when they are turned off but still plugged in. One easy way to combat this is to plug all devices into one power strip and turn it off when not in use.
- **Reduce lighting use.** Turn off the lights when not in use, both in your own office and in common spaces. Use natural light when possible. This can reduce the energy used by electricity.

- **Switch to LED lightbulbs.** LED lightbulbs are 25% more energy efficient than fluorescent lightbulbs and 90% more efficient than incandescent bulbs. While you can't change the building lights, you *can* replace the lightbulbs in your office lamps.
- **Shut down computers when you are not in the office.** Many people access their desktop computer from their laptops at home, requiring computers to be left on during nights and weekends. Consider strategies such as:
 - Accessing work documents via Microsoft Teams or Google Drive.
 - Download documents to your laptop to work on at home.
 - Asking a colleague to turn on/off your office computer when you are working remotely.
- **Work remotely.** Work with your department leadership to explore hybrid work schedules, and coordinate work from home days with other people in your department. This can reduce office lighting and electricity usage, especially if everyone works at home on the same days. See the university [policies on remote work](#).

Contacts and Links

Visit the following links for more information about sustainability and energy conservation at NAU.

- [NAU Building Energy Conservation Initiative](#)
- [NAU Carbon Neutrality Action Plan](#)
- [NAU Office of Sustainability](#)
- [NAU Energy Mentors Program](#)
- [NAU Facility Services Work Orders](#)

If you have any questions or comments, please direct them to any of the following people.

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- Visit our program website for more information: <https://in.nau.edu/green-nau/beci/>