

ENERGY CONSERVATION & ENERGY EFFICIENCY

The Basics



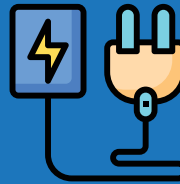
CREEE

CARIBBEAN CENTRE FOR RENEWABLE ENERGY & ENERGY EFFICIENCY

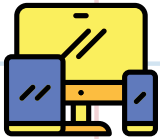
Energy is used to get things done. In day-to-day life, energy can be found in many forms which can be converted to useful work.



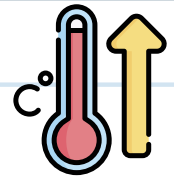
Chemical energy in food allows our bodies to work, and chemical energy in fuel can be burned to create heat or make vehicles move.



Energy in the form of electricity is consumed to make things like cell phones, televisions, computers and even some cars work.



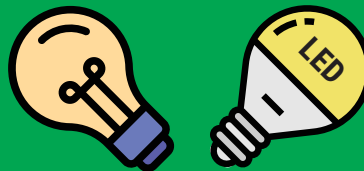
These devices consume energy as they are used, but some of that energy is wasted. For example, sometimes a tablet or laptop gets warm as it is being used - that is energy being wasted as heat.



Both energy efficiency and energy conservation are **ways to use less energy**.

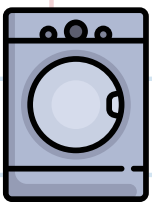
Is there a difference between the two? Let us use lighting as an example.

When regular lightbulbs are used for lighting, large amounts of energy is being wasted as heat at the same time. If the lights are turned off, no energy is being used therefore conserving energy - but there is no light.



However, when LED lights are used for lighting less energy is wasted as heat, leading to energy efficient lighting. When LED lights are switched off energy is being conserved again.

Energy conservation means saving energy by finding ways to accomplish a task **without using energy** at all.



For example, a dryer can be used to dry clothing, and this uses electricity.



However, if the clothes are hung outside to dry on a sunny day, electricity is not used. Hanging the clothes outside to dry, instead of using the dryer, is conserving energy.

Energy efficiency means saving energy by finding ways to **reduce total energy usage and waste** while using energy to complete your tasks.

For example, when using a washing machine, washing a large and small load both use the same amount of energy. This means that washing a small load wastes energy because it uses a large amount of energy for a small result. To be energy efficient in this case would mean reducing energy waste by washing large loads of clothing.



Why does conserving energy and being energy efficient matter? Are there any real benefits?

Firstly, using less energy means lower utility bills and **saving money!**



By using less energy, fewer polluting chemicals are emitted and that helps to **save the environment and ourselves.**



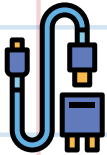
What are some of the harmful impacts of fossil fuels?



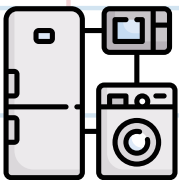
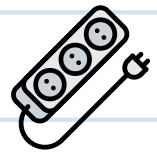
Generating energy from fossil fuels releases chemicals that pollute and harm the environment.

For example, the chemicals released from burning fuels trap heat in the atmosphere, which lead to strange weather patterns - hotter days and nights, worse storms, floods, and other global problems. These long-term changes are collectively called climate change, and the world agrees that it is a very serious problem.

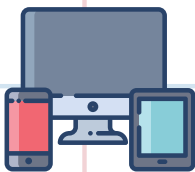
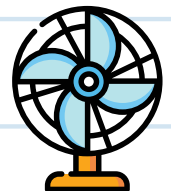
Conserving energy involves **making conscious decisions** every day to find ways to save energy, then following through with action. Over time, with consistent effort, these actions will become second nature to you. Here are some simple energy conservation actions:



Unplug chargers and small appliances not in use. Consider using a power strip for multiple chargers and turning the power strip off when not needed.



Appliances - avoid frequent trips to the refrigerator and place snacks near the front for quick and easy access; turn off fans and lights when not needed; set air conditioner to the highest comfortable temperature and turn off when leaving the room for an extended period.



Electronic devices - check for built-in energy efficiency settings and use them; turn off backlighting on keyboards; put your computer to sleep during lunch breaks, set phone screens to 'time out' or turn off after some time; turn off background apps.

Becoming energy efficient requires more effort upfront but has long lasting benefits. It involves taking time to investigate options. Putting this into action may look like making the decision to purchase items with technology designed to use less energy and reduce waste energy such as appliances with an energy label or LED lights. **Energy labelling systems** indicate how efficient an appliance is. Get familiar with the energy labelling systems in your country and use it to help guide towards making an energy efficient choice.

Conserving energy and being energy efficient both start with the decision to do it.

THERE ARE SO MANY WAYS! CAN YOU THINK OF ANYMORE?

ACTION PLAN

How to start conserving energy at home this week



CREEE

CARIBBEAN CENTRE FOR RENEWABLE
ENERGY & ENERGY EFFICIENCY

STEP 1

Identify how you use energy

(e.g.: charging and using devices, using the fan, etc.)



STEP 2

Choose one appliance to focus on

(e.g: Fan)



STEP 3

Understand how the energy is consumed by that appliance

(e.g.: the fan gets energy in the form of electricity when I plug it in. When I turn the fan on it uses energy to make the blades spin and produce wind for cooling. The faster the blades spin and the longer I have the fan on the more energy the fan uses)



STEP 4

Set goals on how you will use less energy and be more efficient while using it

(e.g.: If I am buying a new fan, I can explore more efficient fan models. On some days I can open the windows instead of using the fan or I can set the fan the lowest comfortable speed. I can allow the fan to rotate so that the entire room is cooled and I can keep the fan clear from obstacles so that air flow is not obstructed. I can turn off the fan when I am leaving the room for a long period of time and unplug the fan when I am not using it.)



STEP 5

Implement your plan and be consistent with the actions, then monitor for savings.

