

Tips for Energy Conservation in Domestic Sector

CONSERVATION IN THE KITCHEN

KEROSENE / LPG SAVING TIPS

- Keep all materials required for cooking within reach before lighting the stove
- Pressure cooking saves fuel and time
- Use optimum quantity of water
- Reduce the flame when boiling starts
- Soak ingredients before cooking
- Shallow wide vessels save fuel
- Use of small burner in a LPG stove saves fuel
- Always put the lid to prevent heat losses
- Clean the burners regularly
- Allow frozen food to reach room temperature before cooking
- For additional savings use ISI marked kerosene and LPG stoves

Make gas & kerosene last longer with simple fuel saving tips



Housewives can save upto 30% of cooking gas or kerosene by following a few simple 'fuel-saving tips'

Given below are a few tips to minimize losses and get value for the money one spends on cooking gas or kerosene:-

1. Plan few minute to save a lot



Avoid an idle flame by keeping all materials required for cooking within reach, before lighting the stove. Experiments have revealed that keeping the flame of the larger burner burning unnecessarily in a gas stove, results even a few paise saved everyday will amount to a sizeable saving by the end of a month.

Remember

Light the stove only after keeping all the ingredients within reach and ready for cooking. Put off an idle flame at once.

2. Use Pressure Cooker to save fuel



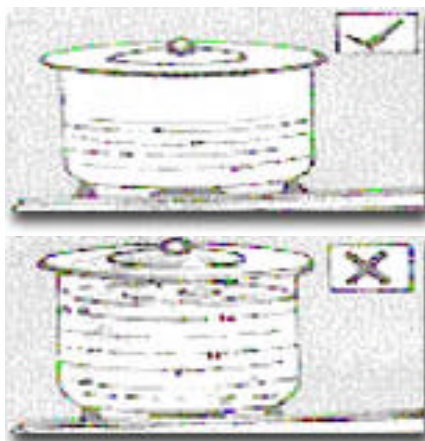
Pressure cooking is one of the fastest and most economical ways of cooking. Experiments have shown fuel (kerosene or cooking gas) savings of 20% on rice, 46% on soaked gram dal and 41.5% on meat, as compared to ordinary cooking is possible. The savings in cooking time are equally high. To obtain further savings from a pressure cooker, use the separators of the cooker to cook different items such

as rice, vegetable and dal, all at the same time.

Remember

Pressure cooking saves fuel and time. Use separators in the pressure cooker to cook different items at the same time.

3. Use optimum quantity of water



The quantity of water used differs for various dishes. And even for the same dish, different housewives use varying quantities of water. Since water is extensively used in cooking, one should remember that surplus water wastes fuel. Besides, when the excess water is drained subsequently, precious nutrients are lost. An experiment on cooking rice with double the required quantity of water has revealed that fuel consumption increases by 65% so always prefer to use only the optimum quantity of water for cooking.

Remember

Surplus water consumes additional fuel which

could otherwise be saved.

4. Reduce the flame when boiling starts



When a vessel's contents reach boiling point, a low flame is enough to keep it boiling. Addition of more heat at the boiling stage causes further evaporation of the liquid without serving any useful purpose. Hence, when water or any other liquid is boiling, reduction in the flame will reduce wastage. This is possible in a gas stove by turning the knob to 'simmer' position or in a kerosene stove by lowering the wicks. Experiments conducted have revealed a saving of 25% fuel when the flame is reduced after boiling had started.

Remember

Always reduce the flame once boiling starts.

5. Soak before cooking



Experiments have shown that soaking ingredients such as dal and rice for various intervals of time before cooking saves fuel. 250 gm of kabuli chana (chick peas) when soaked overnight in water consumed 22% less fuel as compared to the fuel required for the same quantity of unsoaked kabuli chana.

Remember

Sizeable savings in fuel are possible if you soak cereals in water before cooking.

6. Shallow, wide vessels save fuel



A visible flame touching the sides of vessel wastes fuel since it gives out heat to the surroundings. But if you cover the flame as much as possible by using a broad vessel, you will save fuel. Our tests have established that for most stoves, a vessel of 25 cm. Diameter is ideal for cooking. A vessel of this diameter tends to cover the flame completely. Where a narrower vessel cannot be avoided, try and reduce the flame so that it does not creep up on the sides of the vessel.

Remember

Hide the flame with broad bottomed, vessel. Do not use vessels which are narrow as they allow the flame to creep up on the sides.

7. Put the lid on heat losses



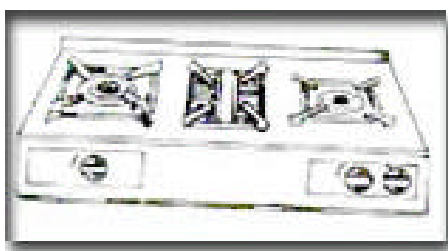
It is a good practice to cover cooking vessels and pans with a lid, as an open vessel loses heat to the atmosphere which means a waste of fuel. A vessel of 100sq.cm. opening, containing not water at 96°C would waste 7.2 GMs Of gas per hour. The heat loss would increase by 2-1/2 times if there is wind blowing through the kitchen. If the vessel is covered by a lid, the heat loss would drop appreciably to

1.45 gm. Of gas per hour as heat is retained within the vessel.

Remember

Always place a lid on an open cooking vessel or pan.

8. The small burner saves fuel



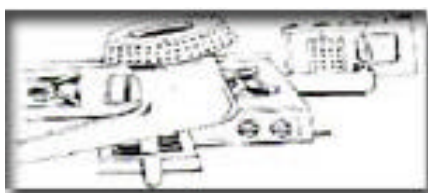
A cooking gas stove has a big burner and a small burner. The small burner consumes 6% to 10% less gas than the big burner! An experiment on cooking 250 GMs Of potatoes revealed that the small burner consumed 6.5% less gas but took 7 minutes more than the big burner. Similarly in a kerosene stove, by cooking at lower flame you will use less fuel. You can now

imagine how much fuel is being avoidably wasted. True, the small burner of the lower flame takes a little more time to complete cooking, but then you are not always in such a hurry that you can afford to waste fuel.

Remember

Use the small burner or lower flame more often, as the case may be especially when you have time to spare.

9. A clean burner helps save fuel



It is important to/clean the burner of your gas range regularly and trim or replace the wicks of the kerosene stove. Soot clogged gas

burners and charred wick-ends of a kerosene stove increase fuel consumption. Regular maintenance of your stove helps you save fuel. In case stove knobs do not move freely, get them attended to.

Remember

A bright, steady blue flame means efficient burning. If you see an orange, yellow or non-uniform flame, clean the burner or wick as the case may be.

10. For additional saving



The use of 'ISI' marked kerosene wick stoves in place of non-'ISI' marked stove saves upto 25% of kerosene and the use of higher efficiency 'ISI' marked LPG stove (the thermal efficiency level of which is 68%+) saves upto 15% of gas.

11. Clean vessels help too

A coating of undissolved salts is usually found on the insides of kettles and cookers. Even a millimeter thick coating can reduce the flow of heat to the vessel's contents. This increases your fuel consumption by as much as 10%.

Remember

Cooking vessels should always be scrubbed clean.

12. Allow frozen food to reach room temperature before cooking

Cold milk, frozen meal or any other cold food-stuff from the refrigerator should not be taken straight to the cooking pot. Keep it out of the refrigerator for some time before putting it on the stove. Very cold food consumes a larger amount of fuel.

13. Plan the meal timings

If all members of the family eat together, which signifies togetherness and increases joy, frequent reheating of food before serving can be avoided. If eating together is not possible, store cooked, hot food in insulated containers to serve it hot later.

Steps to Take to Make the Air Conditioner Work Less Hard

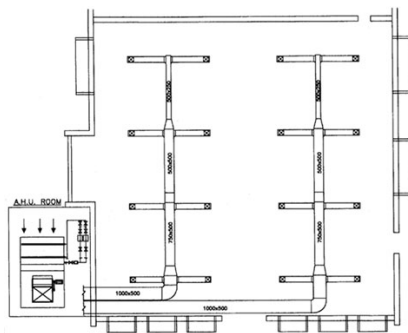


- Close doors and windows while running the air conditioning. Don't use a whole-house fan or window fan while the air conditioner is ON.
- Do use ceiling fan. It will allow setting the thermostat at a higher temperature and will make comfortable at about 78

degrees Fahrenheit without the ceiling fan. With each degree raise of the thermostat, it will save 3-5 percent on the portion of the electric bill going to air conditioning.

- For central air conditioning, shut off registers to unoccupied rooms. And do not shut off too many registers, though, or it may harm the compressor with the increased pressure.
- Don't use "outside air" option very often. It will spend a lot more for the electricity to cool down the incoming outdoor air than to recirculate the already cooled indoor air.
- Keep down the humidity. Use the bathroom exhaust fan while showering. Make sure the dryer is venting outside.
- Central air conditioning systems are more energy efficient than room air conditioners.
- The next step is very important: getting the right size unit as per the need.
- Oversized air conditioner it will run for shorter periods and cycle on and off more frequently. It also won't dehumidify as much so you won't feel as comfortable and will set the temperature even lower. Result: higher electricity bills.

Kitchen Ventilation



- There should be proper ventilation to the outside for the cook-tops and ranges, especially while cooking with gas. But the fan should not be running longer than the need or will result in wasting the energy in heating the home. And make sure the fan in use in the downdraft vent is not too large since that would waste energy too.

- Ventilation fans create a slight vacuum. To balance the air pressure, cold air is sucked in from the outside through cracks in the walls, around windows and doors, etc. Then the heater starts in to heat up the cold air. This is why too big a fan leads to energy waste.
- Worse, if the fan draws out so much air that cold air cannot come into the house fast enough to equalize the pressure, an oil or gas heating system

may not vent properly. This situation may lead to a back draft of combustible gases into the house.

- The back draft problem is a big concern with large downdraft ventilation fans used with some cook-tops and ranges.

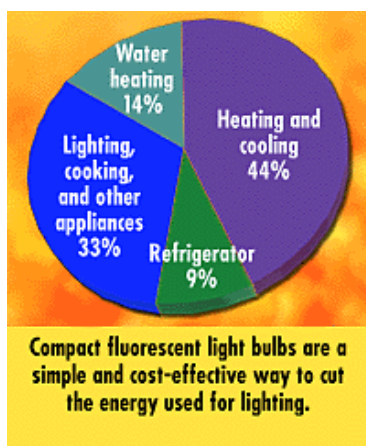
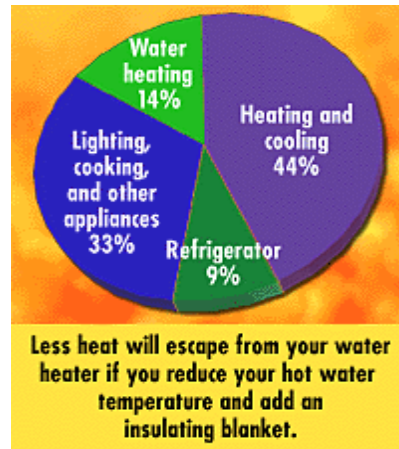
Energy Saving Cookware

- Choosing the right pan for the job can actually save energy--small amounts per meal.
- Smaller is better. Smaller pans need less energy to heat up. Microwaves use less energy than full-size ovens. Smaller ovens use less energy than larger ones. Then put the pan on the burner that fits it best. Remember that smaller burners use less electricity.
- Every type of heating element on an electric cook-top (coils, solid disk elements and radiant elements under ceramic glass) works more efficiently when the bottom of the pan is flat.
- Convection ovens are more energy-efficient than standard ovens. They continuously circulate heat around the food which distributes the heat more evenly so temperatures and cooking time can be decreased.
- In fact, the most efficient pan has a slightly concave bottom, which flattens out when the metal heats up. The more rounded or warped the pan, the less direct contact it has with the burner so the harder the element has to work to heat up the pan.
- Copper-bottom pans heat up faster than other pans. (And they look neat also)
- The flame on your gas burner should be blue. A yellow flame means the gas is not burning efficiently. Call the gas company to check it.
- Microwave will work more efficiently if the inside surfaces are clean.
- The tighter the fit on the pot lid, the less heat escapes.
- Using glass or ceramic pans in the oven allows turning down the temperature about 25 degrees Fahrenheit and still cook the food in the same amount of time.
- Pressure cookers, which build up steam pressure, reduce cooking time and energy use.



Use only ISI Marked Electric Appliances

- Switch off light when not required.
- Use a table lamp instead of an overhead light when reading at a desk.
- Replace 40W tube light by equivalent light output 36W (Slim) tube lights.
- Use Electronic ballasts in place of conventional electromagnetic ballasts I Tube Lights.
- Replace filament lamps with compact fluorescent lamps (CFL)
- Construction of a house should be designed to get maximum sunlight & ventilation.
- Use sunlight wherever & whenever available.
- Use only adequate illumination or the work involved.
- Clean bulbs and tube lights periodically to avoid reduction in illumination.
- Clean fan blades periodically.
- Lubricate bearings of motor periodically.
- Use electronic regulators for the fans.
- Switch off fans when not required.
- Use Light Weight/Energy efficient fans.
- Adopt large scale ironing. Avoid ironing one or two cloths daily.
- Always use nylon belt in Grinders.
- Clean & Lubricate grinder parts periodically.
- Use energy efficient motor for the grinder,
- Use grinder to its full capacity.
- Use Washing Machine to its full capacity.
- Avoid using dryer in washing machines whenever possible.
- When immersion rods are used, switch off when water is heated to the required level. Cover the container with a lid to avoid wastage.
- Switch off directional vanes provided in the air-Conditioner when not required.
- Avoid rewinding motors.
- Avoid leakage of water in taps/joints.
- Use energy efficient water pumps.
- Use correct size PVC Piping System, in water lines.
- Use capacitors for water pumps, to improve power factor.
- Avoid frequent closing and opening of refrigeration door.
- Keep refrigerator away from the wall by



atleast 200mm.

- Use Non-Conventional Energy Sources liked Biogas, Solar Heaters / Cookers, Wind Mills to the extent possible.
- Periodical inspection of wiring may be done to defect leakage if any. Use Earth leakage circuit breakers.
- Use correct size wires, preferably copper wires.
- Dim the lights where you can.
- Light-colored walls reflect more light and so need less lamps

Using the Fridge/Freezer Smartly

- Don't spend more time taking inventory every time the fridge is opened. Think about what you want before you reach for the door.



- Get in the habit of keeping items in the same place in the fridge (e.g., milk in the door, eggs on the second shelf, chocolate cake front and center).
- Make sure foods are covered before they are kept in the refrigerator. Otherwise the moisture in them will evaporate, which makes the refrigerator use more energy.
- Let foods cool before they are put into the refrigerator or freezer. Don't leave food out so long at room temperature that it start growing salmonella, botulism or other nasty food poisoners.
- Freezer works more efficiently when full than when nearly empty, so put some plastic containers like old milk jugs with water in them in the freezer to take up empty space