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Switched on





ENERGY EFFICIENCY
SUPERMARKETS

www.energia.ie





Your chance to reduce your business energy usage by as much as 20%!

20% is a significant figure and reducing your energy bill by this amount could make a real change to your bottom line. By identifying where you can save and implementing the measures to realise those savings, you will be well on the way to achieving optimum energy efficiency in your business. At Energia, our aim is to help businesses use energy efficiency measures to achieve greater success.

Energy Efficiency simply means using less energy to perform the same function. Reducing your energy usage is achievable. Energia is committed to providing you with the right energy solutions for your business.

Contact us on 1850 36 37 44 or email energy.efficiency@energia.ie

> **“ Energy Efficiency simply means using less energy to perform the same function.”**





“ Hot water at the optimum temperature of 60°C will save energy.”



Water

Maintain hot water at the optimum temperature of 60°C which will save energy.

- Hot water tanks should be insulated with a 75mm or 3 inches thick BS Kitemarked insulating jacket. This measure may save up to 30% on your heating costs.
- Insulating all cold and hot water pipes especially those between the boiler and the hot water cylinder.

Also consider the following water saving devices:

- Tap controls switch taps off after a certain time.
- Spray taps reduce the volume of water used.
- Urinal/Toilet flush controls.





Refrigeration

Refrigeration is a major energy consumer and a few simple actions can help reduce the amount of energy used.

Top-loaders & front-loaders:

- Fridges used to cool produce which is not regulated by HACCP can have timers installed and optimising running times can reduce operating costs by approx 20 to 25%.
- Overstocking by filling stock over the recommended packing lines causes cooled air to fall out. Blocked coils can reduce a unit's energy efficiency by approx 2%.
- Maintain a constant stock level as empty spaces causes the refrigeration unit to work harder using more energy.
- Remove items from the top of refrigerators as this causes the units to work harder.

" Empty spaces cause the refrigeration unit to work harder using more energy."





" Open refrigeration wastes a lot of energy."

Refrigeration

Defrost cycles:

As much as 15% of the power consumed by commercial and industrial refrigeration units is used to defrost the heat exchangers. A low cost frost sensor fitted into a defrost control system will start the defrost cycle only when necessary and stop it as soon as the ice has been removed from the heat exchanger. Check with with your manufacturer if a defrost sensor can be mounted on existing refrigeration units.

Refrigeration covers:

Open refrigeration wastes a lot of energy. Case covers can be used to reduce cooling losses when the business is closed. Energia recommends that when it is time to replace open display cases, consider buying upright cases with glass or acrylic doors, which will reduce refrigeration load.





Refrigeration

Walk-in Refrigeration:

As refrigeration can consume up to 43% of a supermarket's energy, the following steps should be considered in a bid to eliminate waste energy:

- Always close the door.
- Check the back of the refrigeration unit and the ceiling inside the freezer; if there is an ice build-up, or signs of dirt on the ceiling or vents, have the unit serviced.
- Check the seal around the door; if it is perished, has gaps, or is missing, have your contractor replace it.
- Install a curtain on your refrigerator door, either an air curtain or a plastic one, this will prevent the cold air from falling out, and warm air from entering.

" Install a curtain on your refrigerator door, either an air or plastic one."





> “ Check for unusual noise, vibration and decrease in performance.”

Refrigeration

Refrigeration - Operation:

- Keep cold air supply and return registers clean and clear of product.
- Maintain minimum recommended refrigeration temperatures for produce.
- Optimal refrigeration efficiency is achieved with ambient air relative humidity levels between 40-55%.
- Identify feasibility of venting or recovering the rejected heat off the refrigeration units’ condensers.

Refrigeration - Maintenance:

- Check for unusual noise, vibration and decrease in performance of compressors/motors.
- Always close the door.
- Clean refrigeration coils regularly and replace door seals that are worn and/or leaky.
- Verify operation and efficiency of defrost timers and moisture sensors to ensure optimal performance.





Refrigeration

- Clean and disinfect condensate drain pans.
- Set up a monthly/bi-monthly maintenance contract.

Refrigeration - Procedures:

- Follow manufacturer's recommendations for shelf position and size and keep upright display case doors shut.
- Rotate stock regularly and do not let refrigerated items sit and warm up during delivery and/or restocking.

" Do not let refrigerated items sit and warm up during delivery."





> “ Eliminate wasted energy by carefully scheduling baking times.”

Baking

Ovens can cost approximately €1.50 per hour to run. Eliminate wasted energy by carefully scheduling baking times and switching off the ovens when not in use. If possible, schedule baking for before 8am to make use of cheaper night rates.

Bakery - Operation:

- Preheat ovens only when necessary and set to minimum preheat temperatures.
- Turn off or reduce temperature of fryers during low demand periods.
- Slow down or turn off exhaust hoods during slow food preparation periods.





Baking

Bakery - Maintenance:

- Make sure oven doors close and seal properly and clean ovens regularly.
- Verify thermostat accuracy and recalibrate if necessary.
- Keep gas appliances' orifices free of debris.

> " Make sure oven doors close and seal properly."





> “ Load and unload ovens quickly to avoid heat loss.”

Baking

Bakery - Procedures:

- Bake during off-peak periods when possible and bake in large volumes.
- Bake foods needing lowest temperature first.
- Bake in large volumes.
- Provide adequate space between pans and oven walls.
- Load and unload ovens quickly to avoid heat loss.
- Turn off oven shortly before baking time is complete and keep door closed to maintain temperature.



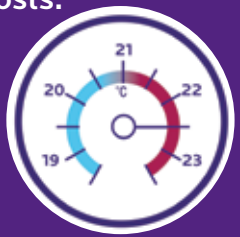


Heating

Heating costs can be reduced by **up to 1/3** by simply maintaining appropriate temperatures and using appropriate heating equipment and controls.

- Reducing the temperature by 1°C may **cut up to 10% off your heating costs.**
- Turn heating off in unoccupied areas.
- Take account of the outside temperature and adjust heating levels accordingly. A multi programmable switch will accommodate varying requirements during the day.
- Location of thermostats is vital to efficiencies in heating systems. Thermostats should not be influenced by sunlight, radiators or draughts. Regular checks will ensure that they are working correctly.
- Thermostatic radiator valves (TRVs) control the heat output from radiators and can contribute to savings.

“ Reducing the temperature by 1°C may cut up to 10% off your heating costs.”







> “ Regular checks will ensure thermostats are working correctly.”



Heating

- Upgrading heating controls to systems that automatically adjust to account for weather / occupancy bringing buildings to optimum temperatures.
- Night setback controls reduce temperatures effectively during specific time periods.
- Zoning areas provides more efficient heating control and can reduce operating costs. Larger areas may need to provide different levels of heating in different zones. Creating heating zones will provide more efficient controls.
- Zoning should be considered where there are:
  - Different occupancy patterns
  - Different temperature requirements
- Maintenance - Service gas boilers once a year and oil boilers twice a year. Regular maintenance can save up to 10% on heating costs.





Lighting

Store lighting is a high energy expenditure and **may be reduced by as much as 50%** with simple energy efficiency measures.

- Replace ordinary bulbs with CFLs/ electronic ballasts delivering similar light but last up to 8 times longer. This uses up to 75% less energy.
- Promote a “Switch Off” policy. Lights should be switched off or dimmed in unoccupied areas.
- Clearly label light switches to help employees only select the lights they need.
- Regular lighting maintenance is essential. Keep windows, skylights and light fittings clean and light levels will be maintained.
- Ensure timers are set to match trading hours and occupancy/dimming sensors are clean and operational.
- Install occupancy sensors to ensure lighting only operates when someone is present and achieve **savings of up to 30%.**
- Control lighting with light sensors and optimise natural daylight.

“ Promote a ‘Switch Off’ policy in your business.”







" Ensure windows and doors are closed, close curtains and blinds."



Lighting

Lighting - Operation:

- Use automated lighting controls.
- Utilise photocells for all-night outdoor lighting.
- Use timers in car parks and restricted access areas and utilise dimming controls to take advantage of day lighting.
- Use motion sensors for low traffic areas.
- Always de-energise ballasts that are not in use and verify recommended illumination levels.
- Reduce lighting to minimum acceptable level for safety / security in: hallways, restrooms, storeroom and coolers.





Lighting

Lighting - Maintenance:

- Clean lamps and fixtures for maximum illumination.
- Repair/replace broken fixtures.
- Replace non-working lamps with the lowest wattage available while maintaining lumen output.
- Develop and implement a lamp upgrade programme to energy efficient lighting (T-5, compact fluorescent, etc).
- Add reflectors to existing lighting.
- Label panels and switches so lighting can be monitored and controls can be accessed.

“ Utilise photocells for all-night outdoor lighting.”







> “ Use task lighting in place of area lighting were possible.”



Lighting

Lighting - Procedures:

- Turn off lights not being used.
- Use task lighting in place of area lighting where possible.
- Open drapes/blinds and use natural lighting when possible.
- Designate and light only specific parking areas for use.
- Use decorative lighting and electrical signs only during high traffic hours.





Ventilation & Air Conditioning

Preventing unnecessary air loss reduces energy consumption and saves costs. If hot or cool air escapes through doors, windows, the fabric of the building or the ventilation system energy is wasted.

- Ensure ventilation and cooling systems are set correctly and consistent with the occupancy in the building.
- Minimise the cooling requirement by reducing the amount of heat from other sources such as sunlight, equipment, artificial light and vending machines.
- Maintaining systems is essential as energy consumption may increase with dirt collecting in air ducts, fans and components.
- Avoid operating heating and cooling systems at the same time and set a temperature ‘dead zone’ which is a gap between the temperatures at which the heating/cooling cut in.
- Recover heat from exhaust air by recirculating some of the exhaust air with fresh air. This combination can be controlled using an indoor air quality sensor.

“ Avoid operating heating and cooling systems at the same time.”





“ Ensure windows and doors are closed, close curtains and blinds.”



Insulation

Approximately 50% of the heat is lost from buildings through walls, floors and ceilings. Improving this loss will result in lower energy costs.

- Insulate, Insulate, Insulate! Ensure all external walls, roof spaces and hot water pipes are insulated and check the condition of the insulation regularly.
- Maintaining buildings and dealing with issues around gaps and holes quickly will save energy.
- Check regularly for damp as it may cause significant damage to insulation properties.
- Keep the heat in! Ensure windows and doors are closed, close curtains and blinds at the end of the day in winter.
- Improve window glazing. Double glazing is now standard and triple glazing is recommended for north facing walls.





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