

# Energy Control in Restaurants

## Part One

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### Using Doors to Optimize Building Efficiency

Running a restaurant involves high energy demands—something many owners are already well aware of. From cooking equipment and refrigeration to lighting, HVAC systems, and the frequent opening of doors, restaurants consume 2 to 7 times more energy per square foot than most other commercial buildings. This energy usage significantly impacts operating expenses, with electricity alone often accounting for 3–5% of total costs. When considering both usage and costs, it becomes evident that unchecked energy waste can quickly eat into profits and hinder sustainability goals.

### PRIMARY CHALLENGES FOR ENERGY LOSS

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While appliances, lighting, and HVAC systems are well-known energy consumers, one frequently overlooked source of waste is heat transfer due to poorly sealed doors, windows, and HVAC components. Fortunately, improving the sealing of doors and windows is often one of the most cost-effective ways to achieve immediate energy savings.

Although upgrading to energy-efficient appliances and systems offers the greatest long-term benefits, addressing basic structural inefficiencies can yield quicker returns.

One of the most effective strategies to reduce energy loss is by maintaining consistent temperature control throughout the restaurant. Unlike many other commercial buildings, restaurants contain multiple distinct temperature zones—including kitchens, dining areas, walk-in refrigerators/freezers, entryways, and cold storage spaces—each with its own energy demands and challenges:

- **Kitchen:** Cooking appliances, exhaust hoods, and refrigeration units generate significant heat, making it difficult to maintain a stable temperature and increasing HVAC load.
- **Dining Area:** Heating, cooling, and lighting systems are used to keep guests comfortable.
- **Walk-in Coolers/Freezers:** These units consume large amounts of energy. Common inefficiencies include damaged gaskets, poorly closing doors, and inadequate insulation.
- **Entryways:** A key point of energy loss, entryways must balance keeping conditioned air inside while blocking unconditioned outdoor air.
- **Cold Storage Areas:** These zones are maintained between 46°F and 59°F for dry goods that don't require refrigeration but still benefit from controlled temperatures.

Addressing temperature control in these areas starts with properly sealed windows and doors and choosing the appropriate types of doors and partitions for each application.

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## TYPES OF DOORS FOR ENERGY CONTROL

Selecting the right door is crucial for minimizing energy loss in restaurant environments.

Key types include:

- ✓ **TRAFFIC DOORS:**  
Commonly used between kitchens and dining areas, these doors swing in both directions with minimal effort and close quickly, reducing unwanted air exchange.
- ✓ **AIR BARRIERS:**  
These create a high-velocity air stream that acts as an invisible barrier, helping to maintain indoor temperature by preventing outside air from entering and conditioned air from escaping.
- ✓ **STRIP DOORS:**  
Also known as strip curtains, these flexible plastic strips separate different temperature zones, limiting air transfer and maintaining desired temperatures, especially in cold storage areas.
- ✓ **COLD STORAGE DOORS:**  
Specifically designed for refrigerators and freezers, these insulated doors often feature magnetic seals or gaskets to prevent cold air leakage and preserve energy efficiency.

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## WHY IT ALL MATTERS

Controlling energy use in restaurants is essential for reducing costs, ensuring food safety, and promoting sustainability. While investing in efficient appliances and HVAC systems is critical, immediate gains can be achieved by minimizing energy loss through better door selection and temperature control strategies. By using the right door in the right place, restaurant owners can reduce unnecessary energy waste and boost operational efficiency.

In Part 2 of this series, we'll explore how to choose the best door types for each area of a restaurant to maximize energy control and performance.

**Reference:** *ENERGY STAR for Small Business: Restaurants. Available online:*  
<https://www.energystar.gov/buildings/facility-owners-and-managers/small-biz/restaurants>.

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