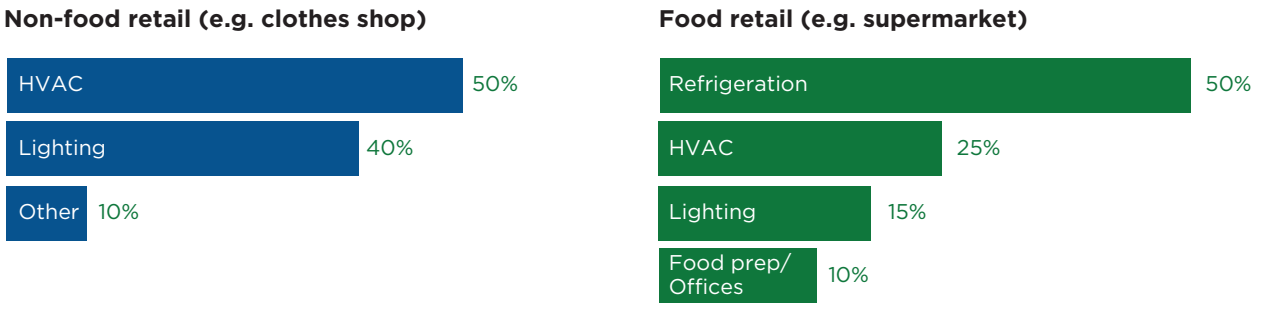
Retail Industry - Energy Costs

The retail industry is a very competitive market. Industry challenges notwithstanding energy consumption is high across the retail sector. How you manage your energy will depend on the type of retail business which you operate. Retailers primarily consume energy in three main categories of operations: stores, distribution centers, and transportation. Additionally, many sell high volumes of energy-intensive products, such as electronics and appliances.

For a non-food business the main energy consumption will be in lighting and HVAC (Heating, Ventilation and Air Conditioning). Retailers who sell food will use a lot of energy on refrigeration.

Energy use breakdown in retail outlets:



Typical retail energy benchmarks

Type	Typical annual energy consumption (kWh/m2/annum)
Non-Food Retailers	167-500
Food Retailers	695-915
Shopping Centres	333-390

Lighting - Heating, Cooling and Ventilation

By targeting energy intensive areas such as lighting and heating, ventilation and air conditioning systems, stores and distribution centres will be able to yield the greatest energy savings and reduce excessive energy consumption.

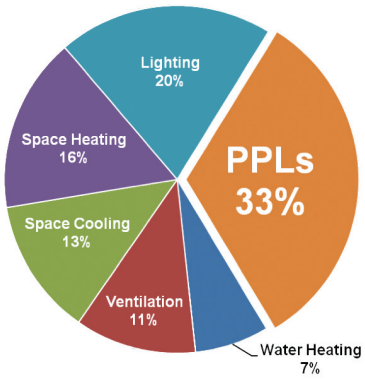
In retail the need for merchandise that looks attractive, together with convenient facilities to make customers feel comfortable, requires that shops use a lot of lighting and have strong HVAC systems to maintain comfortable temperatures. A piece of merchandise that is not well lit will not be easy to sell, while customers who are cold will shorten their visits, being discouraged to stay longer and, therefore, they will buy less. However, if this energy usage is not consumed in a responsible manner it leads retailers to waste resources and face astronomical bills for energy while harming the environment.

Refrigeration

Ultra-low temperature freezers (ULFs). A typical ULF can use up to 20 kWh of electricity per day—as much as a small house! Replacing it with a more efficient unit could save up to 3,000 kWh per year.

Plug and Process Loads

PPLs are building loads that are unrelated to general lighting, heating, ventilation, cooling, and water heating. They typically do not provide comfort to the occupants.



Examples of PPL's in retail environment

- Point of sale
- Cash register
- Barcode scanner
- Vending machines
- Refrigerators
- Self service kiosks
- Electronics sections
- Office equipment
- Low voltage distribution transformers. An older transformer in a typical 4,500sq.m office building can waste 16,000 kWh

Energy Use – Retail

- **Refrigeration**
- **HVAC (Heating, ventilation and air conditioning)**
- **Lighting**
- **Water Heating**

Reducing temperature by 1°C can result in an energy reduction of up to 10%

How to make savings with Digren Energy

You can't manage what you don't understand. This concept applies even more so to energy management. Your first stop should be to get familiar with your energy bills – what tariff are you on, what is your bill made up of (standing charges, day rates, night rates, VAT etc), and how much are you using each billing period.

Once you understand your bills, the next step is to understand where that energy is being used and to identify opportunities to reduce this.

There are a number of ways to substantially reduce energy costs. These vary from no cost, to low cost to high capital expenditure projects. However, The best way to maximise savings is to implement an energy plan specific to your facility and budget. A significant barrier to using energy efficiently is lack of awareness.

At Digren Energy we encourage a developing a plan that follows and includes the following steps to energy efficiency success:

1. **Procurement**
   Obtaining and fixing the best pricing for your electricity and gas is a key factor. A fixed price contract removes the worry of fluctuating gas prices when preparing budgets. A key part of procurement is analysing all the costs of your bill over the past 12 months. Digren energy provide tariff and consumption analysis to provide the maximum savings. The unit rate cost alone is not enough as this is only one component of the bill. The actual unit price is derived from your total bill divided by your consumption – this figure is always considerably higher than the unit rate. We provide full detailed proposals outlining all costs.

2. **Energy Audit**
   Digren Energy provide a sensible approach energy audit. We will request copies of your business's gas, electricity, water and heating oil to determine the energy usage patterns. We then carry out a full survey of the nursing home to identify energy use and wastage. The audit becomes the blue print for your energy plan.

3. **Energy Awareness**
   Digren Energy are committed to helping you get a complete understanding of your energy requirements and to help you develop the tools to create awareness among your staff and the nursing home residents.

4. **Energy Monitoring**
   We offer a number of monitoring products and services. These range from simple reconciliation and verification systems to hi-tech analytical diagnostic measuring and monitoring systems.

5. **Energy Projects**
   Digren Energy can offer a full design and specification service for a wide range of energy projects. In regard to nursing homes these would generally me lighting projects, HVAC efficiency controls and advanced BMS.

6. **Digren – Energy Bureau.**
   Digren Energy offers an Energy Bureau service. This allows our clients get impartial information and/or advice in regard to all aspects of energy management, energy efficient projects, bill reconciliation and energy training.

IT's Easier Than You Think to save money

Many Energy Audits offer advice that requires significant capital cost. Our approach comes very much from a financial control perspective. We identify what can be achieved through in house energy awareness and then certain low cost measures. An energy management plan ideally should be implanted over a 3 year period, in a sustainable manner working with existing resources.

Example of simple energy saving opportunities.

Energy Opportunity	Calculation Method	kWh Savings per year	Cost Savings per year	Capital Cost €
Energy awareness				
Train staff to turn off lights at closing	40 No. 50W spots 12 hrs/day	8.760	1,196	0.00
Manage HVAC effectively and turn off when not in use.	2 AHU's @7kW each 9 hrs/day, 365 days	45,990	6,278	0.00
Low Cost Opportunities				
Replace all applicable tungsten light bulbs	100 lights @82W saving/ light, 24hrs/day, 365	71,832	9,805	600.00

AHU - Air Handling Unit
** Based on average electricity cost of €0.1365 c/kWh*

Digren Ltd. Unit 5A, The Plaza, Greenogue Business Park, Rathcoole, Co. Dublin
Tel: : +353 (0)1 908 1700 **Email:** info@digrenenergy.ie **Web:** www.digrenenergy.ie