



STEP-BY-STEP GUIDE TO:

ENERGY EFFICIENCY AND CARBON REDUCTION IN THE RETAIL INDUSTRY





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ABOUT THIS GUIDE

THE BRC CLIMATE ACTION ROADMAP IS AN INDUSTRY-LED INITIATIVE DESIGNED TO GET THE WHOLE OF THE UK RETAIL INDUSTRY AND ITS SUPPLY CHAINS TO NET ZERO BY 2040.

This Guide has been produced under Pathway 2 of the Climate Action Roadmap, which focuses on helping retailers to operate efficient sites powered by renewable energy.

As part of the retail industry's journey to Net Zero, signatories to the Climate Action Roadmap have committed to Net Zero emissions from purchased electricity by 2030 and Net Zero emissions from direct operations by 2035.

With a growing body of government legislation on energy use in buildings; greater consumer awareness of the environmental impact of their shopping habits; and rising energy prices, now is the time to embrace energy efficiency and low-carbon technologies.

This Guide offers advice and ideas for retailers in improving energy efficiency with a view to reducing their business carbon footprint.

The BRC has set out several milestones that it recognises as good practice for mapping out a route to Net Zero for retailers:

BY 2025



All buildings powered by renewable energy



100% LEDs in all new buildings



Only low impact refrigerant gases (less than 150 global warming potential) for all new refrigerant installations

BY 2030



Sourcing 100% renewable electricity



Renewables to cover all sites' total energy uses



100% LED lighting across all buildings



Only low impact refrigerant gases (less than 150 global warming potential) in use for ALL systems



ENERGY EFFICIENCY AND CARBON REDUCTION: THE BUSINESS CASE FOR RETAILERS

The retail industry's environmental impact reaches far beyond the UK. Not only is retail the UK's largest private sector employer, but its international supply chains also support the livelihoods of millions of people around the world. As a result of this global reach, the industry has a considerable contribution to the lifecycle footprint of goods sold annually in the UK: 215 MtCO₂e (million tonnes CO₂ equivalent) per year, according to BRC figures.

There are strong environmental and ethical drivers for retailers of all sizes to adopt energy efficiency and carbon-reduction strategies. However, a focus on these issues also makes good business sense.



IMPACT ON SUPPLY CHAINS

The impact of climate change is global, and UK retailers are uniquely positioned to understand how climate change can disrupt worldwide retail supply chains.

Shifting weather patterns affect the production outputs of global agriculture, which has considerable implications for the price and availability of foods. Equally, the supply of non-food goods is increasingly affected by extreme weather events and rising sea levels.

These factors have adverse effects on people across the retail supply chain, from producers to consumers who face reduced supplies and rising prices.

By reducing energy use in retail buildings here in the UK, and by adopting renewable technologies, UK retailers are playing a crucial role in helping to tackle the global issue of climate change.

GROWING CONSUMER AWARENESS AROUND ENVIRONMENTAL ISSUES

Media coverage has brought environmental issues into the mainstream, and as a result more consumers than ever want to understand the climate impacts of the goods they buy – and the retailers they buy from.

Research from Accenture showed that across the world, 81% of consumers plan to buy more eco-friendly products.[1] The Climate Change Committee and Imperial College London identified similar preferences in their 2019 research, with 72% of UK shoppers wanting more information on the climate impact of their foods to help them make more informed choices.[2]

The BRC notes that: “Retailers can make a significant impact on customer climate impacts by improving the carbon footprint of the products they sell.”

These shifts in public opinion show there is a strong business case to lean into sustainability and energy efficiency in the retail sector, and for retailers to show their determination to be part of the solution for our climate challenges.

LEGISLATION AND GOVERNMENT POLICY

Legislation and government policy are also important drivers to energy efficient and low-carbon retail operations.

In 2020, the UK Government set out its Ten Point Plan for a Green Industrial Revolution which has set the tone for the national approach to achieving Net Zero carbon emissions by 2050.

The built environment is a key focus of those goals, particularly in terms of reducing energy use and lowering the carbon footprint of all buildings. For example, the Government is setting out to shift the UK away from its reliance on fossil fuels for heating and hot water. The aim is to adopt the use of low-carbon technologies such as heat pumps (See page 21).

Figures from the Department for Business Energy and Industrial Strategy (BEIS) show that retail accounts for around 17% of energy used by UK buildings. For comparison, offices and the industrial sector use around the same amount. Studies also show that small shops create the largest energy demand.

Building owners and landlords in the retail sector are also facing changes in regulations that are driving energy efficiency targets higher. Minimum Energy Efficiency Standards (MEES) currently state that an Energy Performance Certificate (EPC) of at least grade E is required for a new lease.

However, from April 2023 that requirement will extend to cover existing tenancies. What's more, the Government's intention is to lift that minimum EPC to a B rating by 2030 – a significant lift that will also increase the number of commercial properties covered by MEES requirements.

While MEES affects landlords of commercial properties, the rules will also impact building owners looking to protect the long-term value of their property investment. Buildings with low EPC ratings will become less attractive in the next decade, reducing their financial value to potential investors.

While MEES has a significant impact on building owners and landlords, retail tenants have so far seen fewer effects of this legislation. However, government has recognised this issue and is already planning for an update of the MEES approach with proposals for an updated 'performance-based energy efficiency scheme'[3].

This proposed approach, which would be introduced within the next five years, would focus on the energy performance of large commercial buildings 'in-use', by using meter readings as the basis of assessment. Results could be benchmarked against similar buildings to provide a realistic comparison of performance, and to track improvements in energy performance over time.



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As the Government notes: “The Government intends for the annual ratings to provide key information to building owners, occupiers and investors, and for the annual ratings to underpin future policies. As the rating will be performance-based, it will only reward a building with a higher score if the building actually reduces their measured energy use and carbon emissions.”[4]

This shift to measurement of energy efficiency based on metered usage will put the onus on tenants to operate the properties they occupy with a focus on energy efficiency.

ESG POLICIES AND FINANCIAL REPORTING

Over the past decade, the retail industry has increasingly engaged with sustainability and social issues, not only to address the need for carbon reduction within individual businesses, but also as a response to increasing demands from consumers. As a broad industry, there are many aspects to retail's Environment Social and Governance (ESG) policies, from the impact of fast fashion to food miles and energy use in stores and logistics centres.

Investors are also looking closely at these issues when it comes to making choices about the retail market. A recent study from KPMG notes that 84% of retail financial investors are 'actively considering' incorporating ESG criteria into their investment decision. It also lists carbon footprint and energy use as two of the key ESG issues facing retailers [5].

Furthermore, the Task Force on Climate-related Financial Disclosures now requires larger UK companies to make annual climate-related financial disclosures. The regulation, which came into force from April 2022, is part of the UK Government's strategy of making it easier for investors to understand the financial impacts of their exposure to climate change. Government advice on what to include in a disclosure includes energy efficiency as a 'climate-related opportunity' since it reduces operational costs and lowers exposure to future fossil-price increases.

But ESG thinking is not just for large, listed retailers. Smaller, family-owned businesses are being directed by their new generation of owners to adopt higher environmental goals, as they focus on the business impact on the planet and its local community. This is also reflected in the preferences of today's retail customers. The KPMG study *Me, my life, my wallet* notes that 90% of consumers are willing to pay more to an ethical retailer or brand that gives back to society [6].

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ENERGY EFFICIENCY AS A PROFIT CENTRE

And finally, there are the financial benefits of energy efficiency to consider. According to the Carbon Trust, a 20% cut in energy costs represents the same bottom-line benefit as an increase in sales [7].

There is no avoiding the fact that rising energy costs are impacting the UK retail sector. Rising energy prices are pushing up operational costs for retailers of all sizes.

The Carbon Trust refers to energy management as 'the new profit centre for retail business', and as energy costs rise, there is more potential to keep them under control with some simple measures. In addition, any investment in new equipment that saves energy will have a faster payback period.

TAKING ACTION: FIVE STEPS TO START MAKING AN IMPACT IN YOUR BUSINESS (WHATEVER ITS SIZE)

Property in the UK retail industry includes a wide range of building types and sizes. High street stores and corner shops differ widely in their demands for heating and cooling, for example. And increasingly, warehouses and logistics centres are a vital part of the modern retail business chain as they support the ever-growing demand from online shoppers. These buildings can be particularly challenging to optimise for energy efficiency due to their size and construction materials.

In addition, there is an equally broad range of expertise in building and facilities management in the retail sector. Large stores and chains invariably have in-house engineers and facilities managers who may also work alongside external facilities management (FM) consultants to manage the operation of large property portfolios.

On the other hand, there are thousands of independent retailers operating local stores and it's often their responsibility to keep a check on areas such as energy use and maintenance of heating and cooling systems, for example.

Whatever the size of property or the team looking after it, retailers face similar challenges. The steps and questions outlined are therefore designed to be applicable to a retail property of any type or size. Those with access to more sophisticated tools may be able to automate some steps, such as data collection. However, there is no reason for independent retailers not to add their contribution to reducing the overall energy use and carbon footprint of the UK's retail sector.



1. WORK WITH YOUR LANDLORD

Where retailers occupy buildings as tenants, it is vital for them to work with their landlords to build a low-carbon strategy. The BRC has developed a Retailer/Landlord Net Zero Building Protocol which offers important advice on making the most of a cooperative relationship [8].

The Protocol includes several principles which can help to deliver improved energy efficiency in retail buildings. These include sharing relevant and appropriate building data between landlords and their retail tenants. This starts with steps such as agreeing and aligning energy efficiency targets and moves to adopting technology to automate and improve data quality and coverage.

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It is also important to incentivise investment in energy efficiency through improved building fabric and shared investment in energy efficient systems such as air conditioning. The BRC Protocol highlights several benefits of this approach for retail tenants:

- Agreed and aligned energy efficiency targets between landlord and tenant.
- Simplification and standardisation of data requests between landlord and tenant.
- The opportunity to review lease requirements that impact energy usage such as leaving lights on to achieve better energy performance.
- The potential to work collaboratively on the installation of renewable energy systems and energy efficient equipment on-site.

The BRC notes that the intention for the Protocol is that landlords and tenants sign up to these principles at the point of signing a new lease. However, it may be valuable to start the conversation around these issues sooner to introduce actions as soon as possible.



2. REVIEW YOUR EQUIPMENT

It may seem obvious, but are you aware of what air conditioning, heating and ventilation equipment is in your building or buildings?

A review of this equipment will help to establish what equipment is operating in the building, its current state, age and requirements for servicing/replacement.

There are some important indications that heating and cooling equipment is not functioning at optimal levels:

- **The systems are becoming less reliable:** if you have had years of trouble-free operation of air conditioning, for example, but you're now calling out a maintenance team more often, this indicates a degradation of performance. This not only impacts in-store comfort, but the equipment may well be using more energy than it should.
- **Systems energy use is rising:** if you are tracking energy use across cooling and heating systems and seeing kilowatt consumption rising, then it's time to take a closer look. It may be a simple case of a maintenance overhaul. However, it is important to remember that while modern building services equipment is built to last, it will eventually need to be replaced.

- **Indoor temperatures are not stable:** complaints from staff about building hot spots or cold spots can be an indication that equipment is not functioning effectively. This can be the result of changes in a building – shifting partition walls or increased occupancy in some areas, for instance. However, it would be a good idea to check on the equipment as well.
- **Equipment has been standing idle for some time:** if part of your building has been closed for a while over the past two years, it is likely that your cooling and heating systems have been off or operating at minimal levels. It can be an excellent idea in this case to double-check performance and re-start it correctly.

Working with your maintenance or facilities management team can help to ensure these problems are addressed by experts who will be able to identify issues and help you make decisions about next steps.



3. FOCUS YOUR SERVICE & MAINTENANCE ON EFFICIENCY

Do you have a Service & Maintenance (S&M) plan in place? Are you working with your S&M team to focus not just on maintaining equipment but also optimising its performance? This is important because facilities management consultants can help to support energy efficient building operation, but only if clients make that explicit.

If your FM team is collecting data on performance of equipment such as chillers, for example, it's useful to be able to analyse those figures. This can help to identify any fall-off in performance and related increases in energy use. Good maintenance is informed by performance data.

In smaller retail outlets, even checking on simple areas such as filters on vents or air conditioning outlets can reduce the pressure on fans – which are big energy users. Thinking about energy use as part of maintenance and servicing equipment may help to ensure it stays top-of-mind.

Good practice maintenance plans can be based around SFG20 [9], which is recognised as the industry standard for building maintenance specifications. For smaller stores, however, good practice maintenance can be as simple as a checklist with diarised activities:

- Check manufacturer warranties for required maintenance levels – ensure these are adhered to
- Monthly checks on external air conditioning units – this can be as simple as ensuring the area is clear of leaves and other debris to retain good airflow
- Collect data on energy use – retain quarterly bills and track usage over time. Increased energy use can indicate problems with equipment.

The Carbon Trust Better business guide to energy saving says that conducting a regular 'energy walk round' can identify maintenance issues as well as opportunities for energy savings. The Trust's guide includes an 'energy walk round' checklist which can be downloaded and used to collect data [10].

“ Do you have a Service & Maintenance (S&M) plan in place? ”



4. USE CONTROLS TO SAVE ENERGY

Are you using building controls to support energy efficiency? At their most straightforward, controls can ensure heating and cooling are switched off when they're not needed. Check that timers are operating correctly – it could save significant amounts of energy and costs.

Even with more sophisticated control or building management systems, it is important to monitor data. Settings can drift away from original settings – sometimes occupants will hit an 'override' button and then forget to re-set the system to 'Auto'. It's an easy oversight, but one that can burn through a lot of wasted energy.

And if you are collecting data from a building management system (BMS) are you using that data to monitor energy performance? If not, it may be time to speak to the experts about the benefits of that approach.

Monitoring energy performance is also very important for a long-term efficiency strategy. Any activities that save energy (and its related costs) should be recorded: Knowing what works helps to develop the strategy in the future and can also justify future energy-saving investments.

Keeping track of energy use can start with something as simple as knowing where your energy meters are – there can be a different meter for each fuel (gas and electricity, for example) so it is important to understand what is being measured.

Fluctuations in energy use can be seasonal, however by tracking this data over time you will quickly spot unexpected changes that can be an indication of equipment performance deterioration. This can be noted and discussed with your maintenance provider.

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5. PRIORITISE INVESTMENTS

The previous steps will ensure that you understand what equipment is in your building (and its current age/performance); that you have reviewed that equipment with service and maintenance experts; and that you understand the energy performance of your building through monitoring.

Using this information, you can now start to prioritise investments in new equipment. You may decide to renew an older air conditioning system, for example. Or you may wish to prioritise a switch to low carbon technologies such as heat pumps. You may also decide to increase fresh air with a new ventilation system. There are numerous options available for retail businesses of all sizes. But it's essential that you make these decisions based on what is important for your business.

The Better Buildings Partnership highlights four factors to consider when prioritising energy efficiency improvements [11]:

- Ease of implementation
- Cost
- Payback period
- Anticipated savings

Prioritisation will depend on the amount available to invest in energy efficiency measures. Higher spend might include replacement of older equipment, for example. In this case, it will be possible to discuss future energy savings with contractors to ensure you are getting the best payback possible.

However, there are some measures which are lower cost and easier to implement that also provide efficiency improvements. For example, involving staff in energy saving can be very effective. Placing signs around the building reminding staff to turn off equipment that is not in use, is a simple but effective approach. If possible, make building occupants aware of the energy use of the building via screen displays or regular reports. Encouraging staff to think about their own energy use at home can be a useful way to engage and involve them in the challenge.

The return on investment (ROI) for any energy-saving strategy depends on several factors, not least of which is the price paid for energy at any time. As energy prices rise, therefore, any savings that can be made in the short- or long-term gain in value.

MONITORING AND MAINTAINING PERFORMANCE

: HAVING WORKED THROUGH STEPS 1 TO 5, IT IS IMPORTANT TO KEEP MONITORING EQUIPMENT PERFORMANCE AND ENERGY USE. THIS WILL DEMONSTRATE THE SUCCESS OF FUTURE ENERGY-SAVING PROJECTS, AND CAN BE USED TO CALCULATE FINANCIAL SAVINGS, PROVIDING A BASIS FOR FURTHER INVESTMENT IN EFFICIENCIES.

The Better Buildings Partnership identifies key benefits of continuous monitoring, including:

Best-practice ongoing monitoring should start with the appointment of a person or team that is responsible for collecting and collating energy data. Having in-house 'energy champions' gives all parts of the business a place to report energy waste, or to offer ideas for savings.



Identification of energy waste and further opportunities for savings



Demonstrating the impacts of energy efficiency projects in the business



Improved performance and lifecycle of equipment



Supporting further investment in energy efficiency projects



Many businesses find that a cross-functional team is the best approach as this allows for more networking across the organisation. And the team should include high-level management to ensure buy-in from those who can approve spending on efficiency measures.

Regular physical inspections of buildings with a focus on energy efficiency and carbon savings are also recommended. These could be combined with other checks, but it is important to ensure that energy issues are understood to be a priority within the business. Inspection timings depend on the size and extent of properties.

Data on energy use can be collected from building management systems in larger organisations, or from meters in smaller businesses. Collating this data should include identifying three important factors:

- The amounts of energy consumed (electricity and gas)
- Time of consumption – time of day, time of month, time of year – to establish patterns
- Where energy is consumed – sub-metering can identify which equipment or which part of a building uses the most energy.

By establishing a view on energy use and identifying the patterns for your building(s) it is possible to establish a baseline. Ongoing monitoring will then quickly highlight changes in consumption and help the business identify future opportunities for energy saving investments.

TECHNOLOGIES AND TECHNIQUES THAT CAN HELP

Retailers looking to understand the range of available technologies that can support energy efficient building operation could start with the Carbon Trust website which provides several guides.

As noted, it is important to establish priorities for investment in any new technology by thoroughly understanding how energy is currently used in a building. This will enable a retailer to work with their landlord (if they are a tenant) to identify specific areas that could have the most impact on reducing energy waste.

One important point to bear in mind is that reducing your carbon footprint and enhancing energy efficiency must be balanced with ensuring the comfort and wellbeing of retail staff and customers. Fortunately, developments in heating and cooling technologies over the past few years mean that there is a range of options and techniques that can be applied in buildings from the largest retail warehouse to a smaller local store.



HEAT PUMP TECHNOLOGY

A heat pump works by extracting low-level heat energy from the air and using small amounts of electricity to raise the temperature. This is then applied to water or air to create heating for a building. The process is very energy efficient, with 1kW of electricity able to produce an average of 3kW of heating or more. Some heat pumps can also operate in 'reverse', providing energy efficient cooling when required. This can mean that 'heat' from an area being cooled, such as an IT Server room, can be used to supplement the heating requirement in another area, reducing overall energy consumption.

Heat pumps are an increasingly popular technology, since they utilise the UK's increasingly green grid in a highly energy efficient way. They can also be used alongside on-site electricity generation, for example from photovoltaics if the building is suitable. This not only reduces their carbon footprint further, but also provides a very low-cost approach to heating, cooling and hot water generation if required.

One of the most significant developments in the last decade has been the application of heat pump technology to different types of heating and cooling equipment, providing several options to tap into the benefits of heat pumps.





HEAT PUMP EXAMPLES



HEAT PUMP CHILLERS

Air conditioning can be a significant energy user in buildings. The latest chiller technologies address this by harnessing the capability of heat pumps to take low-temperature heat from one source and apply it to another – also known as heat recovery. For example, a heat pump can use the condenser water or return chiller water as its source of heat, and use this to providing heating, or even to supplement hot water production, reducing the load on boilers.



AIR-TO-AIR HEAT PUMPS FOR HEATING AND COOLING

Another option for air conditioning is the air-to-air approach, which also taps into the benefits of heat pump technology. The air-to-air option can deliver both heating and cooling, so it's ideal for smaller retail outlets who want to be more energy efficient while keeping customers and employees comfortable whatever the season.



HEAT PUMP AIR CURTAINS

Although widely-used in the retail environment, air curtains can be significant energy users. Heat pump air curtains can provide the same comfort for in-store staff and customers, while reducing the electricity consumption. This approach results in reduced CO2 emissions and running costs, allowing retailers to operate an 'open door' policy in the most energy efficient way possible. Heat pump air curtains also allow the 'waste' heat to be captured and re-used for example for hot water needs in-store – further optimising energy use.



HEAT PUMPS FOR HOT WATER

In the past, we may not have associated the retail environment with a need for large amounts of hot water. However, in today's changing business, there are a growing number of multi-functional buildings shared by businesses with differing operational needs: retail, gyms, beauty spas, restaurants.

LOW GWP REFRIGERANTS

Although choice of refrigerants may not have a direct impact on energy efficiency, legislation in this area means that many retailers are having to tackle the question of updating refrigeration systems, including air conditioning.

The F Gas Regulations were developed by the European Union to phase down the use of fluorinated (F) gases within its member countries. F gases are powerful greenhouse gases, which trap heat in the earth's atmosphere, contributing to global warming and climate change. The aims of the Regulations are to cut the use of F gases and to reduce their release into the atmosphere.

The Regulations particularly focus on the most common type of F gas, HFCs (hydrofluorocarbons). Under the Regulations, each HFC is allocated a global warming potential (GWP) number to reflect its impact on the environment. GWP indicates how much heat is trapped by a mass of the HFC compared to a similar amount of carbon dioxide. The higher the GWP, the greater its potentially damaging impact on the environment.

Retailers using commercial fridges in their stores and warehouses will already be aware of changes in the refrigerant landscape, but the F Gas rules also apply to air conditioning systems in all buildings.

“ The F Gas Regulations were developed by the European Union to phase down the use of fluorinated (F) gases within its member countries.



Air conditioning manufacturers have been adopting new types of low-GWP refrigerant such as R32. It is important during your building and system review to include the refrigerants being used in air conditioning systems across your estate. As the F Gas regulations set lower GWP standards over the next few years, some refrigerants will become harder to access as they're withdrawn from the market. This could have serious implications for maintenance and operational costs.

Some new air conditioning systems are designed to use less refrigerant. This not only reduces the carbon footprint of the system, but also reduces the ongoing maintenance costs as less refrigerant is required. It is a good idea to discuss this option with your contractor if you are considering updating your air conditioning systems.

CONTROLS

There is no doubt that controls are at the heart of energy efficient building operation. They are an increasingly sophisticated area of building management that can support strategies such as remote monitoring for large, multiple stores and warehouses. Equally, they can be applied at a smaller scale to ensure that cooling and heating in single retail outlets operate only when they're required, cutting energy waste.

SUMMARY

RETAIL IS ONE OF THE UK'S MOST IMPORTANT BUSINESS SECTORS, AND ONE OF ITS BIGGEST EMPLOYERS. THE SECTOR CAN HAVE AN ENORMOUS IMPACT ON THE UK'S CARBON EMISSIONS. CONSUMERS ARE INCREASINGLY AWARE OF ISSUES AROUND ENERGY USE AND CLIMATE CHANGE. ADOPTING POLICIES THAT RECOGNISE THIS IS A CRUCIAL REPUTATIONAL AND FINANCIAL ISSUE FOR ANY RESPONSIBLE BUSINESS.

The rising cost of energy also means that an energy efficiency strategy has become more important than ever – and has the potential to provide quicker financial payback as electricity and gas prices rise.

However, energy efficiency should be an immediate goal that can be targeted by retail businesses of every size. The steps to establishing and building an energy efficiency strategy will lead to lower carbon emissions from each business – and help the UK retail industry achieve its 2040 Net Zero goal.



For retailers who are interested in finding out more about how they can establish and deliver a Net-Zero strategy, Mitsubishi Electric References and Information Sources section provides links to resources around energy management, maintenance regimes and collaboration with landlords.

[The Mitsubishi Electric CPD library](#) also provides in-depth Guides to a range of related topics such as legislation on energy use in buildings, controls and monitoring, renewable heating options and low-GWP refrigerants.

“ Retail is one of the UK's most important business sectors, and one of its biggest employers.



HOW MITSUBISHI ELECTRIC CAN HELP

MITSUBISHI ELECTRIC CAN HELP YOU ACHIEVE YOUR LOW-CARBON AND ENERGY EFFICIENCY GOALS WITH THE LATEST TECHNOLOGY THAT IS DESIGNED FOR THE FUTURE OF BUILDING SERVICES.

At Mitsubishi Electric, our focus for retail clients is in three key areas:



Developing energy efficient heating and cooling systems for all sizes of property



Harnessing the power of techniques such as heat recovery



Providing low-carbon equipment that helps to save energy and deliver comfort

TECHNOLOGIES AND SOLUTIONS

HEAT PUMP TECHNOLOGIES	Mitsubishi Electric's Ecodan range of heat pumps can provide heating and hot water to even the largest buildings. For example, our commercial heat pump range Ecodan QAHV can provide hot water to 90oC, removing the need for a gas boiler to provide water for staff breakrooms or for cleaning.
MAKING USE OF NEW LOW-GWP REFRIGERANTS – AND LESS REFRIGERANT	Mitsubishi Electric has developed a range of low-GWP chillers that use refrigerants such as 1234ze with a GWP of 7. We have also introduced an Ecodan CAHV heat pump for commercial use that uses CO2 as the refrigerant. This has a GWP of 1. Using less refrigerant in an air conditioning system lowers its carbon footprint and reduces ongoing system maintenance costs (as there is less refrigerant to maintain). A good example is the Mitsubishi Electric Hybrid VRF (HVRF) approach. HVRF reduces the amount of overall refrigerant by using water as the medium for transferring cooling or heating into occupied spaces.
GOOD VENTILATION WITH ENERGY EFFICIENCY	It's well-established that good ventilation in any building supports the wellbeing of occupants. But too much ventilation can lead to discomfort and add to energy costs. One way to avoid these issues is through mechanical ventilation with heat recovery (MVHR) One example is Mitsubishi Electric's Lossnay range which simultaneously extracts stale air from a building and supplies fresh, filtered air. And while doing this, the units will simultaneously recover valuable heat energy for optimum efficiency. The Lossnay system uses a special paper core to transfer the heat energy without mixing the air flows. The principles of MVHR can be used in buildings of almost any size, as systems come in a range of sizes, including for individual rooms. The additional benefit is that Lossnay MVHR systems can also be fitted with filters to remove many of the main outdoor pollutants before the air enters the building – adding to the health benefits of the ventilation.
CONTROLS – ON SITE AND FOR REMOTE MONITORING	Mitsubishi Electric has focused on ensuring that its controls are available to a wide range of retail users. Our centralised controller range include easy-to-use digital interfaces, and some of them can also be used to monitor and control third-party equipment which makes them a cost-effective solution for smaller stores. For larger retailers, the MELCloud Commercial cloud-based solution, offers a single platform to monitor and control single buildings or an entire network, helping with the development of a multi-site strategy for retailers. And for business that may already have remote monitoring services for their properties, Mitsubishi Electric's advanced interfaces allow third-party equipment to monitor and control our air conditioning units. This means that they are easy to slot into existing building management systems, saving time on installation and technology interfaces.

If you would like to know more about our advanced range of solutions for the retail sector, visit <https://es.mitsubishielectric.co.uk/end-users/application-by-sector/retail>.

Our Corporate Sales team will also be happy to help with any further information and to chat with you about our technologies. Contact us on: Tel. 0870 3000 070 or email corporatesolution@meuk.mee.com

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10. Carbon Trust Better business guide to energy saving
<https://prod-drupal-files.storage.googleapis.com/documents/resource/public/Better-Business-Guide.pdf>
11. Better Buildings Partnership Energy efficiency opportunities
https://www.betterbuildingspartnership.co.uk/sites/default/files/media/attachment/BBP_How%20to_GN%204.9%20Energy%20efficiency%20opportunities.pdf



BRC CLIMATE ACTION ROADMAP

BRC's Better Retail Better World campaign commits the retail industry to build a fairer, more sustainable economy in line with the UN Sustainable Development Goals. One of the critical goals determined by us and our stakeholders is Climate Action. The BRC Climate Action Roadmap is the framework to guide the industry to Net Zero. Supporters of the BRC Climate Action Roadmap commit to working with other retailers, their suppliers, Government and other stakeholders, and to support customers to collectively deliver the industry's Net Zero ambition.



Suite 60, 4 Spring Bridge Road, Ealing. W5 2AA.



climate@brc.org.uk



brc.org.uk/climate-roadmap



twitter.com/the_brc



linkedin.com/company/thebrc



+44 20 7854 8900

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With a reputation for excellence, Mitsubishi Electric offers an advanced range of cooling, heating, ventilation and controls solutions that are manufactured to exacting standards and provide accurate, energy efficient comfort all year round - supported with the highest level of pre and after sales service. Our dedicated team understands the key legislative and carbon reduction challenges facing retail and can help you optimise your equipment so that it delivers the performance required while meeting today's energy efficiency requirements, minimising emissions and run costs.



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corporatesolution@meuk.mee.com



0870 300 070

