



**DECARBONISING YOUR BLOCK**  
TAKING **ADVANTAGE** OF ALL WE HAVE TO OFFER

# INTRODUCTION

Climate change is one of the most pressing challenges facing our planet. The burning of fossil fuels releases greenhouse gases, primarily carbon dioxide, into the atmosphere, trapping heat and causing global temperatures to rise. This has a range of negative consequences, from extreme weather events to rising sea levels.

The UK government is committed to tackling climate change and has set ambitious targets for reducing carbon emissions. Buildings, including residential blocks, are a significant source of emissions due to their reliance on fossil fuels for heating, hot water, and electricity.

Decarbonisation is the process of reducing these emissions and plays a vital role in achieving a greener future.

We will explain what decarbonisation means for residential block management in the UK. We'll explore the current regulations and upcoming changes that impact your role in ensuring your buildings are energy efficient and sustainable.

## WHAT IS DECARBONISATION ?

Decarbonisation refers to the process of reducing our reliance on fossil fuels and transitioning to cleaner, renewable energy sources. In the context of residential buildings, this means finding ways to use less energy overall and to switch to low-carbon heating systems and electricity sources.

There are several ways to achieve this:

- Improving energy efficiency: This involves making buildings more airtight and insulated, upgrading appliances to more energy-efficient models, and installing smart controls to manage energy use.
- Switching to renewable energy sources: This could involve installing solar panels to generate electricity, using air or ground source heat pumps for heating, or exploring options for connecting to district heating networks powered by renewable sources.



# THE UK **DECARBONISATION** AGENDA

The UK government has set a legally binding target to achieve net zero emissions by 2050. This means that the UK's greenhouse gas emissions will be balanced by the amount removed from the atmosphere. The residential sector plays a crucial role in achieving this goal, as it currently accounts for around 20% of the UK's total carbon emissions.

The Heat and Buildings Strategy, published in 2021, outlines the government's plan to decarbonise homes and buildings across the UK. This strategy focuses on improving energy efficiency, switching to low-carbon heating systems, and investing in renewable energy sources.



## **REGULATIONS** FOR RESIDENTIAL BLOCKS

There are several regulations that impact how residential blocks are managed and maintained with regards to energy efficiency. Here's a breakdown of some key points for property managers:

1. **Minimum Energy Efficiency Standards (MEES):** Currently, all rented properties in England and Wales must have a minimum Energy Performance Certificate (EPC) rating of E. This is expected to be tightened to a rating of C by 2028 (England) and 2030 (Wales), with potential future upgrades to even higher standards. Properties that fall below the minimum rating cannot be rented out.
2. **Building Regulations:** The Building Regulations are updated regularly to improve energy efficiency standards in new buildings and renovations. These regulations cover aspects like insulation levels, energy-efficient windows, and heating system requirements. For existing buildings, ensuring compliance with these regulations during renovations can significantly improve the overall energy performance of the block.

### 3. Financial Incentives Available:

- Energy Company Obligation (ECO): This government scheme requires energy companies to deliver energy efficiency measures in homes. While primarily focused on low-income households, some ECO schemes might be applicable to residential blocks, particularly those containing low-income tenants.
- Salix Finance: This government-funded provider offers loans and grants to public sector organisations and private businesses for energy efficiency upgrades. While not directly applicable to all residential blocks, some blocks might be eligible for Salix Finance support depending on their ownership structure.
- Boiler Upgrade Scheme: Launched in April 2022, this scheme offers grants to homeowners and some landlords for replacing traditional gas boilers with low-carbon heating systems like air source heat pumps. While individual residents might claim these grants, depending on the ownership structure of the block, it's possible for the management company to explore bulk purchase options or explore claiming the grants on behalf of residents.
- Reduced VAT rate for energy-saving materials: The UK government applies a reduced VAT rate of 5% to certain energy-saving materials used in renovations, such as insulation materials, heat pumps, and solar panels. This can help reduce the overall cost of implementing decarbonisation measures in residential blocks.
- It's important to note that these are just a few examples, and the availability and specifics of these schemes can change. Here are some resources that residential block managers can consult to stay up-to-date on relevant financial incentives:
  - Energy Saving Trust: <https://energysavingtrust.org.uk/>
  - Department for Business, Energy & Industrial Strategy <https://www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy>





# SOLAR PHOTOVOLTAIC (PV) PANELS

Harnessing the power of the sun to generate clean, renewable electricity for your buildings.

## THE CHALLENGE: BALANCING ENERGY NEEDS WITH **ENVIRONMENTAL RESPONSIBILITY**

Modern residential blocks require significant amounts of electricity to meet resident needs. However, traditional energy sources often rely on the combustion of fossil fuels, leading to greenhouse gas emissions and contributing to climate change.

## SOLAR PANELS: TRANSFORMING SUNLIGHT INTO **SUSTAINABLE ENERGY**

Solar PV panels provide a clean and sustainable alternative. These panels consist of photovoltaic cells that convert sunlight directly into electricity through a process known as the photovoltaic effect. The generated electricity can then be used to power your building's common areas or even be fed back into the grid, potentially generating additional revenue.

## **BENEFITS OF SOLAR PV** FOR RESIDENTIAL BLOCKS

- **Reduced Energy Costs:** Solar panels can significantly decrease your reliance on the grid, leading to lower electricity bills for residents.
- **Enhanced Sustainability:** By generating clean, renewable energy, solar panels contribute to a reduced carbon footprint for your block, aligning with the UK's decarbonisation goals.
- **Increased Property Value:** Buildings with solar panels are increasingly viewed as modern and environmentally conscious, potentially attracting new residents and boosting property value.

## A **BRIGHT FUTURE** FOR SOLAR POWER IN RESIDENTIAL BLOCKS

The landscape for solar power in residential blocks is constantly evolving. Here are some recent news items highlighting the growing adoption of this technology:

- **Mandate for Solar Panels on New Builds?** In December 2023, a UK government consultation proposed making solar panels a standard feature in new homes and buildings as part of the Future Homes Standard. This move could significantly increase the number of residential blocks equipped with solar technology. [Ref: Solar Energy UK, December 2023]
- **Planning Permission Changes Streamline Installation:** New planning rules implemented in June 2024 aim to simplify the process of installing solar panels on residential buildings. This includes removing the need for planning permission for flat roofs and raising the threshold for businesses, making it easier and faster for blocks to adopt solar power. [Ref: GOV.UK, June 2024]
- **Discounted Energy from Rooftop Solar:** Several local authorities in the UK are implementing schemes where council-owned residential blocks benefit from discounted energy generated by rooftop solar panels. This approach demonstrates the potential for cost savings and wider adoption within the residential block sector. [Ref: Hackney Council News, January 2024]

## CONCLUSION

Solar PV technology presents a viable and attractive solution for forward-thinking residential block management. The next step is to explore the feasibility of implementing solar panels in your specific building



# ELECTRICAL ENERGY STORAGE SYSTEMS (EESS)

The increasing use of renewable energy sources like solar panels presents exciting opportunities for residential blocks. However, the inherent variability of these sources, where energy generation depends on weather conditions, can create challenges in managing power needs. Electrical Energy Storage Systems (EESS) also known as Solar storage batteries, and storage batteries offer a compelling solution, enabling residential blocks to store energy for later use, maximising energy independence and cost savings.

## **THE CHALLENGE:** HARNESSING THE POWER OF RENEWABLES WITH CONSISTENCY

While solar panels and other renewable sources are becoming more prevalent, their energy production fluctuates based on sunlight, wind, or other natural factors. This inconsistency can create mismatches between energy generation and consumption in residential blocks. Excess energy during peak generation times might go unused, while the block may still rely on the grid during peak demand periods.

## **ELECTRICAL ENERGY STORAGE:** CAPTURING AND UTILISING RENEWABLE ENERGY

EESS act as batteries for your residential block, capturing excess electricity generated by solar panels or other renewables. This stored energy can then be used to power the block during periods of low generation or high demand, optimising energy usage and reducing reliance on the grid.

## **BENEFITS OF EESS** FOR RESIDENTIAL BLOCKS

- **Enhanced Self-Consumption of Renewables:** By storing excess solar or reduced rate grid-generated electric, EESS enable blocks to utilise a greater share of the clean energy they generate, reducing dependence on the grid and lowering carbon footprint.
- **Improved Grid Stability:** EESS can help stabilise the electricity grid by injecting stored energy during peak demand periods, reducing strain on the grid infrastructure and potentially lowering overall energy costs.
- **Optimising Energy Costs:** Utilising stored renewable energy during peak grid pricing times can lead to significant cost savings for residential blocks. Residents benefit from lower electricity bills, while the block management can potentially generate additional revenue by selling stored energy back to the grid during high-demand periods.

## **INTEGRATION: THE POWER OF SYNERGY**

EESS play a crucial role in integrating various clean energy technologies within a residential block, creating a synergistic ecosystem:

- Solar Panels and EESS: The ideal partnership. EESS capture excess solar energy during peak generation times, ensuring the block can utilise this clean energy even when the sun isn't shining.
- Electric Vehicle (EV) Chargers and EESS: A forward-thinking combination. EESS can store excess renewable energy for charging electric vehicles, promoting sustainable transportation within the block.
- Block Lighting and EESS: A path to energy efficiency. EESS can provide a reliable source of power for building lighting during off-peak solar generation times, maximising the utilisation of renewable energy.

## **CONCLUSION**

EESS are a transformative technology for residential blocks, enabling a shift towards greater energy independence, sustainability, and cost savings. By integrating EESS with solar panels, EV chargers, and building lighting, residential block management can create a comprehensive and efficient renewable energy ecosystem for a cleaner and more sustainable future.





# BMS SYSTEMS

The complexity of modern residential blocks demands efficient and centralised management of various building systems. Building Management Systems (BMS) offer a sophisticated solution, integrating control over lighting, heating, ventilation, security, and other critical functions.

## **THE CHALLENGE:** MANAGING COMPLEXITY FOR OPTIMAL PERFORMANCE

Modern residential blocks house numerous interconnected systems – lighting, heating, ventilation, security, and fire alarms. Managing these systems efficiently can be challenging, requiring constant monitoring and adjustments. Traditional methods are often time-consuming and reactive, leading to potential inefficiencies and higher operational costs.

## **BUILDING MANAGEMENT SYSTEMS:** ORCHESTRATING EFFICIENCY AND COMFORT

A BMS acts as the central nervous system of a residential block, providing real-time monitoring, control, and optimisation of various building systems.

- **Centralised Control:** A BMS offers a single interface for managing and monitoring all connected systems, simplifying operations and reducing the need for manual adjustments.
- **Data-Driven Insights:** BMS collects data from various sensors throughout the building, providing valuable insights into energy consumption, equipment performance, and occupancy patterns.
- **Automated Optimisation:** Based on the collected data, a BMS can automatically adjust settings for lighting, heating, ventilation, and other systems, optimising energy use and ensuring occupant comfort.

## **BENEFITS OF BMS FOR RESIDENTIAL BLOCKS**

- **Improved Energy Efficiency:** BMS can optimise energy usage by automatically adjusting lighting, heating, and ventilation based on real-time occupancy and weather conditions. This leads to lower energy bills for residents and a reduced carbon footprint for the block.
- **Enhanced Comfort:** Residents benefit from a more comfortable living environment as BMS ensures optimal temperature, ventilation, and lighting conditions.
- **Reduced Operational Costs:** The centralised control and automated optimisation capabilities of BMS can lead to significant cost savings on energy consumption and maintenance.
- **Improved Maintenance Management:** BMS allows for proactive maintenance by providing alerts on potential equipment issues, enabling timely repairs and avoiding costly breakdowns.



## INTEGRATION: A SYMPHONY OF SYSTEMS

- BMS excels when integrated with other technologies within a residential block, creating a seamless and intelligent ecosystem:
- BMS and Renewables (Solar Panels and EESS): A powerful combination. BMS can optimise energy usage by prioritising renewable energy sources like solar power and stored energy from EESS whenever possible, further reducing reliance on the grid.
- BMS and Lighting Systems: An efficient partnership. BMS can automatically adjust lighting levels based on occupancy and natural light availability, minimising wasted energy.
- BMS and Fire Alarm/Security Systems: A crucial integration. BMS can integrate with fire alarm and security systems, providing real-time notifications and facilitating automated responses to emergencies, enhancing overall safety and security for residents.

## CONCLUSION

Building Management Systems offer groundbreaking technology for residential block management. By integrating BMS with renewable energy sources, lighting systems, and fire alarm/security systems, you can create an intelligent and efficient building ecosystem. This approach optimises energy use, enhances resident comfort, and improves overall building operations.

# HVAC (HEATING, VENTILATION, AND AIR CONDITIONING)

Maintaining comfortable temperatures in residential blocks is essential for resident well-being. Traditionally, this has been achieved through separate heating and air conditioning (AC) systems, often reliant on fossil fuels. However, advancements in HVAC technology offer a more sustainable solution - heat pumps. These innovative systems provide both heating and cooling capabilities, creating a comfortable living environment while minimising environmental impact.

## **THE CHALLENGE:** ACHIEVING COMFORT WHILE EMBRACING SUSTAINABILITY

Traditional gas boilers and electric AC units are prevalent in residential blocks. However, concerns over energy security and climate change necessitate a shift towards cleaner and more efficient HVAC solutions. Heat pumps offer a compelling alternative, utilising renewable energy sources to deliver both heating and cooling, reducing reliance on fossil fuels.

## **HEAT PUMPS:** A VERSATILE SOLUTION FOR YEAR-ROUND COMFORT

Heat pumps don't directly generate heat or cool air. Instead, they transfer thermal energy from a source (air, ground, or water) to the building. This process uses significantly less electricity compared to traditional resistance heating methods, resulting in improved energy efficiency. Modern heat pumps offer reversible functionality, providing both heating and cooling capabilities throughout the year:

- **Heating Mode:** In cooler months, the heat pump extracts heat from the outdoor air (air source) or ground (ground source) and transfers it to the building's interior, providing warmth for residents.
- **Cooling Mode:** During warmer months, the heat pump reverses its function, extracting heat from the building's interior and releasing it outdoors, offering cool and comfortable living spaces.

## **BENEFITS OF HEAT PUMPS AND AC INTEGRATION FOR RESIDENTIAL BLOCKS**

- **Reduced Carbon Footprint:** Heat pumps significantly decrease reliance on fossil fuels for both heating and cooling, leading to lower greenhouse gas emissions and a more sustainable approach to climate control within the block.
- **Improved Energy Efficiency:** Heat pumps require less energy to provide heating and cooling compared to traditional systems, translating into lower energy costs for residents and reduced operational expenses for the block management.
- **Year-Round Comfort:** Modern heat pumps offer reversible functionality, ensuring a comfortable living environment for residents throughout the year.



## **INTEGRATION: A SUSTAINABLE HVAC ECOSYSTEM**

Heat pumps excel when integrated with other renewable energy technologies in residential blocks, creating a powerful synergy:

- Heat Pumps and Solar Panels: A perfect match. Solar panels can generate electricity to power the heat pump, maximising the use of renewable energy for both heating and cooling needs. Excess solar energy stored in EESS can further optimise the use of clean energy for powering the heat pump.
- Heat Pumps and Ground/Air Source Heat Exchange: Depending on feasibility, ground or air source heat exchangers can provide a stable and efficient source of thermal energy for the heat pump to extract, ensuring consistent performance throughout the year.

## **CONCLUSION**

Integrating heat pumps and AC technology with renewable energy sources like solar panels and EESS offers a groundbreaking approach to HVAC systems in residential blocks. This approach significantly reduces reliance on fossil fuels, lowers carbon footprint, and creates a more sustainable and cost-effective solution for maintaining year-round comfort for residents.

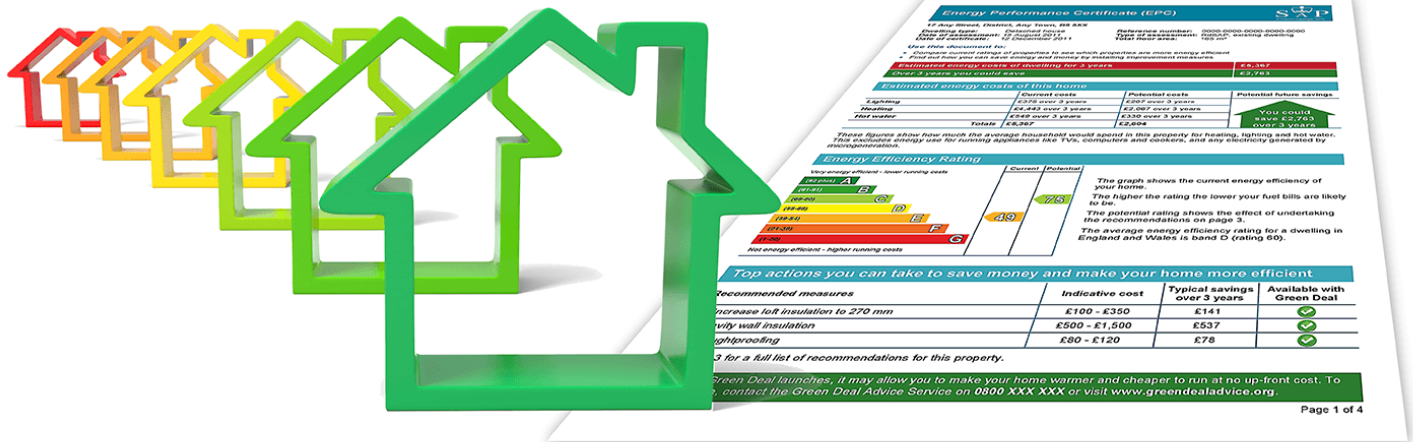
# ENERGY CONSULTANCY

The growing urgency to address climate change demands a significant reduction in carbon emissions from buildings. Residential blocks, with their concentrated energy needs, present a sizeable opportunity for decarbonisation efforts. Energy consultancies play a crucial role in this process, offering a comprehensive approach to identify potential improvements and guide residential block management towards a more sustainable future.

## SHINING A LIGHT ON ENERGY CONSUMPTION: **ENERGY AUDITS AND EPC REPORTS**

- **Energy Audits:** A comprehensive energy audit conducted by a qualified energy consultant provides an in-depth analysis of a residential block's energy consumption patterns. This includes identifying areas of energy inefficiency, assessing the performance of existing building systems, and quantifying potential energy savings through various improvement measures.
- **Energy Performance Certificates (EPCs):** EPCs provide a standardised rating system for the energy efficiency of a building. Energy consultancies can produce EPCs for residential blocks, offering valuable insights into the building's overall energy performance and potential areas for improvement.





## THE POWER OF KNOWLEDGE: THE FOUNDATION FOR DECARBONISATION DISCUSSIONS

The information gathered through energy audits and EPC reports forms the foundation for a critical discussion about decarbonisation strategies for a specific residential block. Here's why this information is crucial:

- **Identifying Opportunities:** By understanding a block's energy consumption patterns and areas of inefficiency, a qualified energy consultant can identify effective decarbonisation measures tailored to the specific building. This ensures the proposed solutions directly address the block's unique energy challenges.
- **Data-Driven Decisions:** The data and analysis provided in energy audits and EPC reports allow for informed decision-making. This ensures that the chosen decarbonisation strategies are not only impactful but also financially viable for the specific block and its residents.

## CHARTING THE COURSE: A TAILORED APPROACH TO DECARBONISATION

There is no "one size fits all" solution for decarbonisation. Decarbonisation strategies need to be customised to address the specific characteristics of each residential block. Here's why:

- **Building Variations:** Residential blocks vary significantly in factors such as size, age, construction materials, and existing energy infrastructure. These factors significantly influence the suitability and effectiveness of different decarbonisation measures. For example, a high-rise building might benefit from solar panels on the roof, while a low-rise block might be better suited for ground source heat pumps.
- **Resident Needs and Preferences:** Decarbonisation solutions need to consider the needs and preferences of residents. Factors like upfront costs, potential disruption during implementation, and desired energy savings targets all play a role in selecting the most suitable strategies for each block.

# THE ROLE OF ENERGY CONSULTANTS GUIDING DECARBONISATION

Energy consultancies act as trusted advisors, guiding residential block management through the decarbonisation process. Here's how:

- **Strategy Development:** Armed with the insights from energy audits and EPC reports, energy consultants can develop a customised decarbonisation strategy for each block. This strategy outlines a roadmap for implementing various measures, considering feasibility, cost-effectiveness, and resident needs.
- **Financial Considerations:** Energy consultants can help explore available financial incentives and grants to support decarbonisation efforts in residential blocks. This can make these projects more financially attractive for both block management and residents.
- **Project Management:** Energy consultancies can manage the entire decarbonisation project, coordinating with contractors, installers, and relevant authorities to ensure smooth implementation and optimal results.

## CONCLUSION

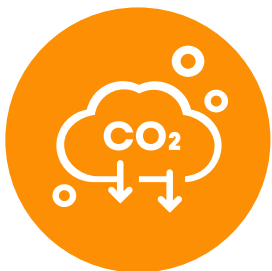
Energy consultancies play a vital role in propelling residential blocks towards a more sustainable future. By conducting thorough energy audits and providing EPC reports, they acquire the critical knowledge needed to discuss and implement effective decarbonisation strategies. This tailored approach ensures that each block embarks on a path towards reduced carbon emissions, creating a cleaner environment for residents and contributing to a more sustainable future for all.



# TAKING THE NEXT STEPS:

- Contact Us for Expert Decarbonisation Solutions: Reach out to Future Decarbonise today to discuss your block's specific needs and discover tailored solutions for a sustainable future.
- Schedule a Consultation: Our experts are ready to provide a comprehensive assessment and guide you through the process of decarbonising your residential block.
- Stay Ahead of Compliance and Regulations: Ensure your block meets current and future energy efficiency standards.
- Unlock Financial Incentives: Learn how to leverage available grants and incentives to support your decarbonisation efforts.
- Join the Movement: Work with Future Decarbonise to reduce your carbon footprint and contribute to a greener future for your community.

**CONTACT FUTURE DECARBONISE NOW TO BEGIN YOUR JOURNEY TOWARDS A MORE SUSTAINABLE AND ENERGY-EFFICIENT RESIDENTIAL BLOCK.**



020 3826 9999

info@future-group.uk

future-group.uk

12 Oakwood Hill Industrial Estate | Loughton | Essex | IG10 3TZ

