



Energy efficiency opportunities vary considerably, ranging from behaviour change to procedures to optimise settings and controls, to significant capital investment projects. Different energy saving opportunity types will be of interest to, and the responsibility of, asset, property and facilities managers, and occupiers.

Energy efficiency opportunities involve the consideration of a number of elements:



STAGE 1: IDENTIFY OPPORTUNITIES FOR IMPROVEMENT IN EFFICIENCY

There are different ways to approach the identification of energy opportunities. Determining the preferred approach will depend on multiple factors including the asset type, the availability of data, the technology installed and the budget available for investigation works.

If the budget for identifying energy efficiency opportunities is limited, the following should be considered:

- Reviewing the existing PPM to identify any recommendations.
- Benchmarking the energy use of the building (REEB could be used to do this).
- Asking the M&E contractor to conduct a simple review of the operation of the plant in the building.
- Considering the recommendations with the EPC Recommendation Report.

If there is budget available for a more comprehensive review of energy efficiency opportunities, the following should be considered:

- Instructing a Building Management System review.
- Undertaking a sustainability audit.
- Instructing an M&E consultant.
- Conducting a thermal survey of the building.



STAGE 2: PRIORITISE THE RECOMMENDATIONS

It is likely that a review of potential energy efficiency opportunities will provide multiple recommendations, some of which will be more practical than others.

An exercise to evaluate and prioritise opportunities should be undertaken. This should consider factors such as ease of implementation, cost, payback period and anticipated savings.



STAGE 3: DETERMINE HOW THE RECOMMENDED INITIATIVES ARE TO BE FUNDED

It is important to determine whether the asset manager is willing to fund or forward fund any of the recommendations identified by the review of potential energy efficiency opportunities which require capital investment. This is likely to depend on a range of factors, including payback period and alignment with corporate sustainability targets.

Other funding options may include the service charge (depending on the recommendation and the provisions within the service charge clause), or government grants for certain initiatives (for example there is limited government funding available for electric vehicle charger installations).

STAGE 4: INSTRUCT THE IMPLEMENTATION OF APPROPRIATE ENERGY EFFICIENCY IMPROVEMENTS

It is important that the parties who will carry out the energy efficiency improvements are identified and instructed.

For capital works, this will involve the procurement of suitable contractors. For behaviour change opportunities, engagement with communications and human resource teams within both property and facilities managers, and occupiers, will be important.

STAGE 5: MONITOR AND REPORT ON THE IMPACT OF THE IMPROVEMENTS

It is important that the energy data available for the property is reviewed before an improvement project is implemented to create a baseline, and also after the project. This will enable the impact of the improvement to be assessed and shared with relevant stakeholders.

Energy efficiency improvement opportunities: Examples

There are a number of general areas that support energy efficiency. These include:

Plant

- Review existing settings:
 - Review the plant run times to ensure that meet the occupational requirements of the building.
 - Review the deadbands on the air handling units.
 - Adjust chilled water to run at 7°C flow and 13°C return (an increase of 1°C).
- Increase the zoning capabilities of the building services.
- Replace fans with direct drive (no belts).
- Increase the frequency at which the air filters are changed.
- Install CO2 sensors to the air handling units so that they can run on demand when required (room mounted sensors are often recommended over duct mounted sensors).
- Install a smart building system the building operation can be monitored remotely – some systems also allow for settings to be changed remotely.

Equipment

- Replace existing lighting with LED or energy efficient lighting.
- Consider using using lower overall ambient light levels, along with task lighting at individual desks.
- Install PIR sensors to control the lighting.
- Install daylight sensors to control external lighting.
- When replacing existing equipment consider energy efficient alternatives.
- Utilise energy saving features on existing equipment- such as allowing the lights within lifts to turn off when not in use, and for them to run slightly slower.

Monitoring

- Install AMRs to ensure the data collected is accurate.
- Ensure there is sufficient sub-metering in place to identify where there are high loads.
- Install AMR sub-meters where possible.

Fabric

- Replace single glazed windows with double or triple glazed windows.
- Where it is not feasible to replace single glazed windows consider installing secondary glazing.
- Apply solar control film to windows to reduce solar gain and winter heat loss.
- If you are carrying out refurbishment works determine whether additional insulation can be installed.
- Install draught proofing doors between conditioned and un-conditioned spaces.

Behaviour Change

- Make the energy consumption of the building visible to building occupiers and users- this could be done via a screen display, energy reports, or operational performance certificates.
- Introduce signage to promote efficient use of the building such as using the stairs rather than the lifts, turning equipment off when not in use and efficient use of space.
- Trial a gamification project to incentivise occupiers to be energy efficient with their use of the building.