



## A summary of the “Energy efficiency in buildings guidance for UN Facilities Managers” report

### What’s the business case for energy efficiency?

**Economic:** Efficient energy use can reduce costs. A number of energy efficiency measures are available which are simple to implement and are quick to deliver returns.

**Security:** Global energy prices are rising as demand outstrips supply. Improving energy efficiency now will give organisations an advantage and pay dividends in the future by ensuring operational security.

**Environmental:** Saving fossil fuel energy cuts the greenhouse gas emissions associated with business operations, helps demonstrate green credentials to UN’s shareholders, and helps to meet ISO14001 commitments.

### What process needs to be in place for energy efficiency?

There is a five stage process to reaching energy efficiency:

1. Establishing a baseline of energy use.
2. Tackle the ‘no cost’ then ‘low cost’ measures. A no-cost measure is one that is free to implement (although it may take an hour or so of your time), and low cost measures are ones that will pay for themselves within six months.
3. Consider the medium cost measures. These measures should pay for themselves in less than two years.
4. When there are any major building changes, consideration should be given to whether any measures which were not previously possible could be implemented during the refurbishment / relocation.
5. Throughout this process energy use should be monitored and energy savings reported to enhance the business case for future energy efficiency plans.

### What about leased buildings?

Managers of leased buildings face unique problems when improving energy efficiency. These actions are specifically applicable to leased buildings:

1. Ensure that the UN team responsible for lease negotiations are aware of the importance of energy efficiency when sourcing premises.
2. Specify from the outset of your property search / lease negotiations that an energy efficient building is a top priority for the UN.
3. Ask to see the energy performance statistics for the building, for example an energy performance certificate in the EU.
4. Ask what energy efficiency measures have been carried out to the building already, using the top ten actions identified in this guide as a basis for discussions. If no and low cost measures haven’t been carried out, explore whether this is possible.
5. Ask the landlord to increase the energy efficiency of the building as a condition of taking the lease.
6. If you are renegotiating your lease, ask the landlord to increase the energy efficiency of the building. Use the top-ten list of actions in this summary to provide them with suggestions.
7. Look at specific features when considering the energy efficiency of a building, such as: district heating / cooling systems, advanced control systems, solar water heating, integrated renewables, hybrid or natural ventilation, passive solar design to maximise natural light but reduce overheating, a highly efficient building envelope including wall construction with high levels of insulation, double or triple glazing, roof insulation,

draught proofing, energy efficient lighting systems including timers, occupancy sensors, and CFL (compact fluorescent light bulbs)bulbs / high efficiency tubes, energy efficient space / water heating systems including timers, individual room thermostats, heat exchangers on ventilation, thermostatic radiator valves, and pipe insulation.

8. Encourage energy efficient behaviour among staff to reduce carbon emissions and energy costs.

### **What are the top actions to reduce energy use?**

1. Establish current energy usage and check bills to make sure you are on the right tariff (no cost)
2. Incorporate energy efficiency into maintenance activities (no cost)
3. Exclude draughts (low cost)
4. Increase the energy efficiency of water heating systems (low cost)
5. Improve the efficiency of air conditioning / ventilation systems (no cost / low cost)
6. Improve the efficiency of lighting systems (low cost)
7. Install or top up loft / roof space insulation (low cost)
8. Insulate walls (medium cost)
9. Increase the efficiency of space heating systems (low cost)
10. Double or triple glaze all windows (medium cost)

### **What are the next steps for UN owned buildings that want to go further in reducing use?**

Renewable sources of energy generation are a visible statement of an organisations commitment to sustainability. However, it only becomes cost effective to consider renewable sources once energy efficiency measures have been installed to reduce demand.

Examples include:

- Wind turbine – offers energy security and big reductions in electricity bills.

- Biomass – as fossil fuel prices rise, biomass is likely to be a cheaper option in the medium term.
- Ground, air and water source heat pumps – for every unit of electricity into the system, 3 – 4 are typically output.
- Solar photo-voltaic (PV) panel – offers energy security and big reductions in electricity bills.
- Co-generation technology (combined heat and power) - this captures heat emitted in electricity generation and uses it to heat local buildings. This makes the conventional production of electricity far more efficient and delivers financial and environmental benefits.
- Tri-generation technology (combined cooling, heating and power generation) - can be used in warmer climates. It harnesses the heat as a by-product from power generation and transforms it into cooling energy.

### **What are the next steps for leased buildings that want to go further in reducing use?**

The issue of building-integrated renewables can be raised with your landlord during lease negotiations, especially if the building is due to undergo a refurbishment or upgrade of services. Determine whether the UN or the landlord / managing agent is responsible for choosing the electricity supply for the premises. If onsite renewable generation is not possible or suitable, consider specifying to your landlord that you want a 'green' electricity tariff.

For further information please read the full report: [Energy efficiency in buildings – guidance for Facilities Managers.](#)