

University of Essex Energy Policy

Part A

Declaration of Commitment

As part of its environmental strategy, the University is committed to responsible energy management and will practice energy efficiency throughout all its premises, plant and equipment, wherever it is cost-effective to do so. This statement is also reflected in Part D of the University's Environmental Policy.

Policy

The Policy of the University is to control energy consumption in order to:

- avoid unnecessary expenditure
- protect the environment, and
- prolong the useful life of fossil fuels

Objectives

The University's long term objectives are to:

- buy fuels at the most economic cost;
- burn and use fossil fuels as efficiently as practicable enabling future generations more time to research alternative energy sources;
- reduce the amount of pollution, particularly CO₂ emissions, caused by its energy consumption;
- reduce, wherever possible, our dependence on fossil fuels through the use of ambient and renewable energy;
- reduce the loss of energy from its buildings to the minimum practical level

Accountability

- Development Committee to encourage Council to make available sufficient funds to meet the requirements of the Energy Policy.
- The Energy Manager to ensure:
 - that information and advice is available on all aspects of energy management
 - that all energy supplies demonstrate good value for money
 - that energy awareness is encouraged in all staff and students
 - that all aspects of energy waste are investigated and rectified if avoidable
- Staff and students to be made aware of the cost of energy directly under their control to encourage good housekeeping practice.

See Appendix A for good housekeeping measures.

Review Procedures

- Energy Manager to submit a report on the achievement of energy targets and any energy saving projects undertaken.
- Reports to be submitted to Summer Term meeting of Development Committee.
- Command chain for recommendations from Energy Manager:
 - Deputy Director of Estate Management (Facilities)
 - Director of Estate Management
 - Budget Sub-Committee

- The Energy Manager will produce regular reports showing energy usage against agreed targets where adequate metering is available (predominantly the Catering, Accommodation and Estate Management Sections). The results will be discussed with users and where necessary they will be given recommendations for reducing energy demand.

Part B

Space Temperature (Heating)

The University endeavours to maintain a comfort level temperature of between 18°C and 20°C throughout all areas except residential accommodation. The residential areas will be maintained between 20°C and 22°C. The minimum temperature requirement as set by the [Workplace \(Health, Safety and Welfare\) Regulations](#) is 16°C. Note this does not apply to residential space.

Past experience in running the buildings has revealed quite large variations in temperature due to the structured form of the buildings, that is, extensive glazing and concrete framing. People should bear this in mind when evaluating their feeling of comfort if moving around the University. See Appendix B for definition of comfort levels which depend on many variable conditions. Some of these the University has no control over.

Note :- Electric Heaters, other than those issued by the Estate Management Section are prohibited for use throughout ALL University properties. See Appendix D for details

Please refer to "Temperature and Thermal Comfort at Work" which can be found at the [The Health and Safety Advisory Service \(HSAS\)](#)

Heating Periods

Academic and related areas, including Post Graduate rooms:

- **Normal heating hours** are optimised to be at working temperature from 8.45am to 7.00pm, Monday to Friday, from 1st October to 1st May inclusive.
- The University provides heated study areas within the library and 24 hour open access lab's for use outside the stated academic times above.
- The University will not heat individual rooms within the Main academic buildings, outside the stated academic day unless employees are contractually required to work outside the above hours.
- Where employees are required to undertake work outside the academic day on a temporary basis, a request should be submitted to the Director of Estates by the Head of Department / Section or his/her representative who will consider it on a case to case basis. Significant additional costs for providing heating outside normal working hours may be charged back to the Department.
- ***Our priority is your Health & Safety and comfort on campus. Using the designated study rooms outside the stated academic times, will ensure your comfort and safety, as they are heated and predominately have security measures in place.***
- **The heating Season** may be extended during May and September if there are periods of 3 consecutive days, or more where the outside day time temperature dose not rise above 16°C. However if internal temperatures are below the legal minimum, we will endeavour to provide supplementary heating.

- **Electric Heaters, other than those issued by the Estate Management Section are prohibited for use throughout ALL University Properties**

Restaurant, Food Outlets and bars areas:

- As per advertised opening hours.

Library:

- As per advertised opening hours.

Student residential accommodation:

- First and second term heating optimised to be at working temperature from 8.00am to midnight, Sunday to Thursday, and 8.00am to 2.00am Friday and Saturday. The Summer term heating optimised to be at working temperature from 8.00am to 2.00am seven days per week.

Wivenhoe Park Conference Centre:

- Management Committee to agree working temperatures and time periods required with Conference Centre Manager, having due regard to the Energy policy objectives.

Summertime Conditions

Except where a process requires controlled conditions, The University has a non Air conditioning Policy.

Please refer to " Temperature and Thermal Comfort at Work" which can be found at the [The Health and Safety Advisory Service \(HSAS\)](#) . This gives advise to both staff and Heads of Department/Section/Centre.

See Appendix C for arrangements relating to the cost of installation, maintenance and running of air conditioning plant.

Appendix A

Good Housekeeping Practice

Individually, small savings you can make, add up collectively to large savings in energy. Remember there are over 8,000 people here and approximately 10% of energy could be saved by thoughtful use of facilities. This does not mean you have to sit in cold dark offices or accommodation. When energy is needed use it, however when not required turn it off or reduce to low level.

The following suggestions are ways to achieve this ideal:

- Try to plan your day if using a computer. Don't just switch it on first thing in the morning and off last thing at night, when the system is perhaps only used for an hour. This is 'avoidable waste'.
- Lighting is another area overlooked and needs your attention. Try and use natural day light only.
- Doors and windows during the heating season come into the above category, do not leave them open longer than necessary.

- Water too is an energy source:
 - energy is required to process and distribute to taps
 - hot water requires heating
- Use water wisely.

Everyone can help by clearing their minds of 'it is not my job/problem so why should I bother'. It is everyone's problem by virtue of your actions.

Example: Day-lit stairs and corridor lights found on in full sunshine, why? probably lack of thought and understanding.

In the last hundred years the gradual build up of carbon dioxide (CO₂) in the atmosphere is in fact caused by human use of fossil fuels. Please help to limit this process by thinking carefully about your actions. Other gases we have made use of are all so causing problems in our atmosphere. If we are not more careful we could find ourselves on the path to extinction. We may already be on it!!

Appendix B

Thermal Comfort Conditions

The technical definition can be difficult to understand so we will try to describe it in 'lay person language' with examples.

In most areas of the University we only control one internal climatic condition, namely air temperature in winter. There are many other factors which go to make up the sensation of thermal comfort or in our case a person's feeling of warmth as follows:

- air temperature
- radiant temperature due to the temperature of surrounding surfaces
- air movement
- humidity
- together with personal factors such as clothing and activity

Many attempts have been made to devise indices which combine the above variables. Dry bulb air temperature (we use this) has long been used as a convenient measure of warmth, but it can sometimes be misleading. Of the many indices around the most commonly encountered are equivalent temperature, effective temperature, globe temperature (the Energy Manager has one sitting on his desk) and resultant temperature.

Four measurements are required to evaluate the thermal environment:

- Air temperature (which we control in winter).
- Mean radiant temperature (not directly controlled), but is present from working radiators, sunshine, lights, machines, surface temperature etc.
- Wet bulb temperature (to determine humidity not directly controlled).
- Air speed (only controlled where ventilation equipment in use).

From the above it will be apparent the Estate Management Section will have great difficulty in satisfying everyone's needs as we only effectively control one input, (see below 'HOW CAN YOU HELP').

From various research by Learned Societies a comfort scale has been devised to indicate a measure of perceived feeling of warmth :-

- Hot
- Warm
- Slightly warm
- Neutral
- Slightly cool
- Cool
- Cold

This scale is used in a voting system analysis to determine a neutral temperature at which the majority of people feel neither too warm or too cold.

For sedentary occupations the majority of people will be satisfied in rooms where the resultant temperature is between 19oC and 23oC when the air speed is 0.1 metre/second (i.e. normally still air).

Staff can obtain a temperature monitor, from the Estate Management Section by calling extension 2959.

HOW CAN YOU HELP

Winter Months

- Anticipate weather condition by watching or listening to local forecasts. This can determine the type of clothing you should wear that day at work.
- Keep a spare jumper in the office for those 'off days' when you may feel chilly.
- Make sure all windows and curtains are closed at the end of your working day.
- If your room is feeling stuffy; renew the air by fully opening a large window for no longer than 10 minutes and promptly close.
- Do not sit still for long periods, take exercise to warm body extremities and take hot drinks.

Arrange office furniture so that you can:

- Reach the radiator valve to turn off or on as you require.
- Do not drop clothing or other articles over radiators, this acts
- as an insulation to heat transfer.
- Try to sit where you can feel the radiant heat from the radiator or sunshine.

To use our heating energy resources effectively requires treading a very thin line between:

- Lots of complaints
- A few complaints
- And no complaints, with windows thrown open

Co-operation and tolerance is required from the total University community under this condition, if we are to achieve the main principles of the energy policy.

Appendix C

Comfort Cooling (Air Conditioning)

In general this Institution will not install air conditioning. The supply of fresh air for oxygen replenishment, dissipation of body odours and high temperature limitation will be accomplished by natural ventilation. This will result in high summer time temperatures on approximately 23 working days per year in some rooms.

Approved portable fans are acceptable for use in very hot weather.

Deviations to the above principle will occur in the following circumstances:

Ventilation

Mechanical ventilation will be provided to fulfil the following criteria:

- to provide sufficient air for oxygen replenishment and dissipation of body odours where this cannot be accomplished by natural ventilation
- to remove stale, hot or noxious fumes from toilets, cooking canopies, fume cupboards or the like

Air Conditioning

Full space temperature controls and possibly humidity control will be provided to fulfil the following criteria:

- Where the combined effects of the heat input from people, lights and machinery cause the room temperatures to rise more than 5°C above the ambient temperature.
- Where processes are wholly dependent upon close temperature control.
- Subject to the Director of Estate Management Section approval and where Department or Sections are prepared to pay the cost of installing, maintaining and the electrical consumption over the whole life of the system.

Air Conditioning Costs

Anyone wishing to have comfort cooling installed will be expected to arrange for the funds to cover the following works to be transferred to the Estate Management Section Budget before installation work can be undertaken. The costs are indicative only. Actual costs will be calculated at the time a request is made.

- Installation costs: Between £75 - £150/m³ of conditioned space. This is an initial payment only.
- Running Costs: all supplies will be metered and charged for monthly.
- Maintenance Costs: Charged yearly.

Example: consider a small office with a volume of 30 m³ @ £100 m³ to install.

Approx cost would be:-

- £3000 for installation.
- £250 p.a. for electrical costs

Guidance Note

Building regulations (Part L) requires extensive energy efficiency improvements to made as part of any comfort cooling installation. This cost must be allowed for within your project costs.

Portable Comfort Cooling Units (Portable AC units)

The advice regarding the air conditioning policy also extends to portable units, unless sanctioned by the Director of Estate Management Section.

Please refer to " Temperature and Thermal Comfort at Work" which can be found at the [The Health and Safety Advisory Service \(HSAS\)](#).

Appendix D

Electric Heaters

Policy regarding electric fires:

The University does not support the acquisition or use of supplementary heaters, of what ever energy source. Such items can only be provided by the Estate Management Section in the event of an emergency or mechanical failure of the heating system or at the discretion of the Director of Estate Management.

The Section will issue heaters:

- Where additional heating is needed to provide an acceptable working temperature that meets legal requirements (see: www.essex.ac.uk/ohsas/temperature/default.htm). In these circumstances a request should be submitted to the Director of Estate Management by the relevant Head of Department / Section or their representative.
- On health grounds if advised by Occupational Health to the Director of Estate Management Section.

Your Health and Safety

Unauthorised electrical items used on campus, increases the risk to you and fellow members of the University community. As unauthorised heaters cannot be safety checked by us and unnecessarily overload electrical circuits, it is imperative all heaters are issued only by The Estate Management Section.

- **Electrical energy creates most CO₂**

The generation and consumption of electrical energy is the worst culprit for emission of CO₂ to the atmosphere.

Electric heating is used reluctantly throughout the University. The seven North Houser's is an exception due to its use of off peak electricity when storage heaters are recharged overnight.

Appendix E

Advice regarding building planning, extension of the teaching day and evening room use

In recent years the University has been asked to expand its student population with little expansion of facilities. This has caused the teaching day to be extended to accommodate the extra student numbers.

Due to seminar/study rooms being scattered around large buildings this has caused our heating energy demand to rise by having to keep all rooms heated later in the day.

Energy saving could be made by reviewing this situation through consultation and subsequent alterations to some heating pipe work where economic to do so. Security access would also require assessment.

Energy use should also be considered when making the following decisions:

- Teaching time table
- Room use and position in buildings
- Room moves
- New building layout

Appendix F

Lamps

The Estate Management Section is phasing out the use of Tungsten, Halogen spot lights and T8 and T12 Fluorescent fittings within its maintenance activities.

The use of this type of lamp will not be permitted within building refurbishments and new build.

Appendix G

Domestic Hot Water Temperatures

The Estate Management Section will manage Domestic Hot Water Temperatures on its campuses for safety and efficiency. These will fall between 40°C where it is mixed/blended and 60°C.