The University of Plymouth is committed to responsible energy and water management as part of its overall environmental strategy. It endorses the principle that energy and water conservation is of paramount importance in terms of reducing operating costs and protecting the environment.

The University of Plymouth aims:

i) To improve and maintain, at the highest standards possible, the energy and water efficiency of its buildings and facilities, reducing the consumption of fossil fuels and the impact of harmful emissions.

ii) To avoid unnecessary expenditure on energy and water consumption.

Responsibility for formulating and overseeing this policy lies with the Director of Procurement and Sustainability. The day to day responsibility for management and implementation of the university’s energy and water management strategy will be held by the Energy and Environment Manager.

Responsibility for energy and water use resides with all staff and students.

Objectives

In line with the university’s Carbon Management Plan, energy and water consumption will be reduced by better use of existing plant and investment in new and innovative technologies. New buildings will be as energy and water efficient as economically practical. In addition the university community will have access to help and advice with reducing their energy and water consumption. To help achieve the university’s carbon reduction target of 25% by 2015 the university will:

Reduce its electricity consumption by 15% by 2015. Performance will be measured against the University’s 2005/06 emissions of 17.3 GWhs per annum.

Reduce its gas consumption by 54% by 2015. Performance will be measured against the University's 2005/06 emissions of 22.1 GWhs per annum.

The university will reduce the annual water performance indicator to below 3.3 m³ per student per year by 2015. The reduction will be based upon the 2007/08 performance indicator of 7.3 m³ per student per year.

Ongoing: Ensure the purchase of energy and water is at the lowest possible cost in line with utility procurement policy.
### Summary of targets and savings

<table>
<thead>
<tr>
<th></th>
<th>2005/06</th>
<th>2014/15</th>
<th>Reduction</th>
<th>Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electricity</strong></td>
<td>17.28</td>
<td>14.66</td>
<td>2.62</td>
<td>£248,554</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>22.06</td>
<td>10.07</td>
<td>11.99</td>
<td>£479,492</td>
</tr>
<tr>
<td><strong>m3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Water</strong></td>
<td>122068</td>
<td>64796</td>
<td>57272</td>
<td>£257,726</td>
</tr>
<tr>
<td><strong>Student nos.</strong></td>
<td>16757</td>
<td>19000</td>
<td>est</td>
<td></td>
</tr>
<tr>
<td><strong>m3/Stu</strong></td>
<td>7.28</td>
<td>3.41</td>
<td>3.87</td>
<td></td>
</tr>
</tbody>
</table>

Total savings based upon 2011/12 unit costs ....... £985,772

---

**Graph Legend:**
- **Red** Carbon Emission to Date
- **Pink** Planned Reduction to 2015 (CMP)
- **Blue** Planned Reduction from 2015 to 2020
- **Gray** Construction Lines

Chart showing the university’s carbon emission targets. The short and medium term targets are in respect to the 2005/06 baseline consumption. Estimated emissions will change in line with development strategies.'
Strategy and Operational Guidance

To reach its objectives the University will:

- Promote energy awareness to all staff and students. To alert them to the cost of energy directly under their control and to encourage good housekeeping practice. Information, data and advice can be obtained from the university intranet on the environmental community page at the following link http://intranet.plymouth.ac.uk/enviro/intranet.htm.

- Monitor and report energy performance in an appropriate way. Monthly and annual reports can be located from the university intranet on the environmental community page at the following link http://intranet.plymouth.ac.uk/enviro/intranet.htm.

- Reduce consumption of fossil fuels and utilise energy from sustainable sources where practicable.

- Rectify and avoid all aspects of energy and water waste.

- Buy fuel and power at the most economic cost and to maximise, where practicable, the use of fuel types which cause least harm to the environment.

- Identify and implement energy saving measures and practice energy efficiency throughout all university premises, plant and equipment where it is cost effective to do so.

- Incorporate environmentally sensitive designs into both new and refurbished buildings complying with and where practical improving on relevant standards and codes of practice.

- Avoid air conditioning/cooling unless absolutely essential. The university discourages comfort cooling and this should be considered as a last resort. The university accepts that there will be instances during the summer months were the ambient temperature will high and staff should dress accordingly and take measures to maximise their comfort.

- Promote good energy management practices to other organisations.

- Prohibit the practice of direct electric supplementary heating, unless there is an emergency. The University does not support the acquisition or use of supplementary heaters. Any unauthorised electric supplementary heater discovered will be confiscated or disabled by having the plug lead removed. Appendix A details the procedure.

- Prohibit unauthorised electrical items. These increase the risk of shock to members of the University community. The use of unauthorised heaters may unnecessarily overload electrical circuits, it is imperative all heaters are issued only by The Estate and Facilities Management Department.

- Have a nominated Energy and Environmental Manager responsible on a day to day basis for the implementation of the Energy and Water Policy. All Faculties / Departments within the University will have access to the Energy and Environmental Manager for advice and training in energy and water conservation matters.
Control energy and water consumption by reviewing and improving the effectiveness of energy and water use throughout the University.

Keep energy and water consuming equipment is at optimum efficiency. Waste should be kept to a minimum by controlling the level of energy and/or water that is required and by switching off equipment when not in use.

Invest in a rolling program of energy saving measures. Carbon reduction projects are funded from a ring-fenced budget based upon the HEFCE Salix funding model. A key principle is that financial savings from the projects are repaid back into the ring-fenced fund for re-investment in further projects. Once the original project investment is repaid to the fund, the university is free to keep ongoing savings. The university does not have to repay the money loaned while it continues to re-invest savings in eligible projects.

Reduce water consumption through tighter control and the elimination of leakage.

Provide heating that has ‘optimised’ and ‘weather compensated’ control and will achieve a working space temperature during core times as detailed in Appendix B, Monday to Friday. With some exceptions, the heating season will typically be from 1st October to 1st May inclusive however this may vary dependent upon the prevailing weather conditions. 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 does not rise above 16ºC. However if internal temperatures are below the legal minimum heating will be provided.

Adopt the following space temperature set points: - NB Except where a process requires controlled conditions, and in exceptional circumstances the university has a non air conditioning policy.

**Heating**

<table>
<thead>
<tr>
<th>Area</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classrooms</td>
<td>19ºC</td>
</tr>
<tr>
<td>Laboratories</td>
<td>18ºC</td>
</tr>
<tr>
<td>Lecture Theatres</td>
<td>19ºC</td>
</tr>
<tr>
<td>Offices</td>
<td>19ºC</td>
</tr>
<tr>
<td>Circulation Spaces</td>
<td>16ºC</td>
</tr>
<tr>
<td>Dining Areas</td>
<td>19ºC</td>
</tr>
<tr>
<td>Toilets</td>
<td>16ºC</td>
</tr>
</tbody>
</table>

**Cooling**

<table>
<thead>
<tr>
<th>Area</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classrooms</td>
<td>24ºC (in exceptional circumstances)</td>
</tr>
<tr>
<td>Laboratories</td>
<td>24ºC (in exceptional circumstances)</td>
</tr>
</tbody>
</table>
Lecture Theatres 23°C

Offices 24°C (in exceptional circumstances)

For example, in Lecture Theatre where there is heating and cooling. The room will be heated to a temperature of 19°C, should the temperature continue to rise, the cooling system will not function until a temperature of 23°C has been reached. If the temperature is greater than 23°C the cooling system will operate until it drops below this level. It is important not to set heating temperatures too high or cooling temperatures too low otherwise the individual systems will operate adversely.

Set core times for heating and cooling operation as detailed in Appendix B. Individual building strategies will be accommodated as part of the Building Management System plant operation strategies.

*The University will not heat individual rooms within the Main academic buildings, outside of core times. – See Appendix A.*
Policy Review

The Energy and Water Policy is intended to be effective for the period May 2012 to July 2015. This policy document will be reviewed and updated annually.

The Energy and Environmental Manager will produce an annual report covering consumption, expenditure and KPI’s and will highlight energy management activities over the previous year and future threats and opportunities.

Procurement Procedures

The Carbon Advisory Group (CAG) will discuss energy strategy and consider consumption reports. The CAG will report to the Sustainability Executive on utility consumption / expenditure with respect to utility budgets. The CAG is responsible for the procurement of utilities.

Responsibility for controlling the consumption of energy resides as follows:-

i) Estate and Facilities Management is responsible for:-
   a) All mechanical and electrical services. Any alteration, modification or extension of the services must have Estates Services approval.
   b) The set times of operation of heating and cooling plant.
   c) The control of space temperature in line with this policy.
   d) Ensuring plant is maintained and controlled to operate at optimum efficiencies.
   e) Ensuring energy and water utilisation equipment is correctly selected, installed and commissioned.

ii) Each Faculty / Department is responsible for their own equipment and to ensure that it is maintained in accordance with manufacturer’s instructions and complies with current legislation. This will ensure it will operate in the most energy efficient manner possible and care should be taken over operational times to avoid waste. Purchase of new energy or water consuming equipment should be done in consultation with the Estate Services and care should be taken to ensure the equipment is energy/water efficient. Additional benefits are the economy of scale, uniformity of spares and traceability. Alternative solutions to the purchase of new equipment will be recommended if found to be more cost effective.

iii) Each individual is responsible for controlling their own local energy consuming equipment, e.g. photocopiers, personal computers, thermostatic radiator valves, office lighting, etc. Personal heating appliances will not be permitted. If it can be shown that supplementary heating is required then it is to be issued from Estates Services.

iv) The Energy and Environmental Manager is responsible on a day to day basis for the implementation of the Energy and Water Policy. The Energy and Environmental Manager is responsible for the maintenance of the University’s energy and water monitoring and targeting system. The information obtained from the monitoring and targeting system is available to all staff and students.
Communication

Formal communication on matters relating to energy consumption and energy management activities will be channeled through the Energy and Environmental Manager, who will, where appropriate, bring it to the attention of all relevant end users, his/her line manager or other senior managers.

The Energy and Environmental Manager will report to his/her line manager on energy management activities.

All energy management activities will be subject to an annual report. The Energy and Environmental Manager will establish and report on progress towards meeting objectives and the value for money of individual activities wherever possible.

Monthly and Quarterly reports on energy and water consumptions, on a site by site basis, will be produced. The information contained in these reports will be available to all staff / students and can be found on the intranet link http://intranet.plymouth.ac.uk/enviro/intranet.htm.

Standards

The Energy and Water Policy objectives shall be achieved by ensuring:-

i) As a minimum requirement, the standards of the latest version of the Building Regulations Approved Documents, in particular Part L.

ii) Design procedures and briefs for new buildings include energy targeting. Managers responsible for new projects must ensure that schemes include the maximum fundable investment in features which will reduce the consumption and cost of energy over the life of the building. These shall be incorporated in the Building Log Book.

iii) The overall target of (i) and (ii) to be used as a design brief minimum for all new building and refurbishment projects.

iv) Design of lighting systems shall incorporate energy efficient operation and control as a primary consideration.

v) Where a maximum payback period of 5 years at projected tariff rates can be achieved, it is the policy to upgrade buildings to the overall target standard, priority being determined by the projected return on investment.


Funding

i) Energy and water conservation and carbon reduction initiatives for all new buildings and building refurbishment schemes shall be included within the overall design brief, and funded from the project budget.

ii) Specific energy and water conservation schemes are to be justified principally on the basis of energy saving / carbon reduction. The University has adopted the HEFCE Salix ISP scheme for funding carbon reduction projects. The budget for funding carbon reduction projects is ring fenced and project authorisation is within strict approval parameters (see project compliance tool). Further details of the scheme can be obtained from the following link http://www.salixfinance.co.uk/home.html.
Appendix A

Plymouth University

Electrical supplementary heating is expensive to run when compared to other forms of heating and is harmful to the environment typically producing 3-4 times the amount of carbon per kWh when compared to gas. Electrical supplementary heating will only be allowed on a strictly controlled basis. If you believe you have a special need then the following procedure should be adopted.

Contact Estates helpdesk on x 88488

A data logger will be put in your room for a period not less than two days.

Based upon the data obtained from the logger a decision will be made on the provision of supplementary heating or the alteration of heating schedule. Alteration to the schedules and supply of heaters will be reviewed at regular intervals by the BMS operator.

NB: Estates staff are authorised as part of the Energy Policy to remove or disable a heater if it has not been approved by Estate Services or the Energy and Environmental Manager.

Electric Supplementary Heaters, using University purchased electricity, impact upon the utility budgets, the university’s carbon footprint, carbon taxes such as the Carbon Reduction Commitment and the Climate Change Levy, and uncontrolled use can influence a buildings general heating/cooling arrangement, potentially affecting the environmental conditions of everyone else in the building.

The heating season will typically be from October to May. The university accepts that there are times, outside the heating season, when temperatures can fall. Because of this staff and students are encouraged to wear warmer clothes if they feel chilly. Why not leave a warm woolly or fleece at work for such times?

Contact: Paul Lumley Energy and Environmental Manager plumley@plymouth.ac.uk

Legislation applied.

Minimum Temperature – 16°C within the first hour of occupation. Health and Safety at Work Act.

Maximum Temperature – heating will be provided to 19°C. Energy Act 1976 amendment 1980 no. 1013.
### HEATING SCHEDULES

<table>
<thead>
<tr>
<th>NON RESIDENTIAL</th>
<th>MONDAY TO FRIDAY</th>
<th>SATURDAY and SUNDAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>October</td>
<td>0700 – 1000</td>
<td>1400 – 1500</td>
</tr>
<tr>
<td>November</td>
<td>0630 – 1200</td>
<td>1400 – 1600</td>
</tr>
<tr>
<td>December</td>
<td>0630 – 1200</td>
<td>1200 – 1700</td>
</tr>
<tr>
<td>January</td>
<td>0600 – 1200</td>
<td>1200 – 1700</td>
</tr>
<tr>
<td>February</td>
<td>0600 – 1200</td>
<td>1200 – 1700</td>
</tr>
<tr>
<td>March</td>
<td>0600 – 1200</td>
<td>1200 – 1700</td>
</tr>
<tr>
<td>April</td>
<td>0700 – 1100</td>
<td>1400 – 1600</td>
</tr>
<tr>
<td>May</td>
<td>0700 – 1000</td>
<td>1400 – 1500</td>
</tr>
</tbody>
</table>

NB. The Library is open 24 hrs a day and the above schedule do not apply.