

Implementation Guidelines for Facilitating Energy Conservation and Carbon Reduction of the National Changhua University of Education: Abridged Version

1. The National Changhua University of Education (hereinafter, ‘the University’) has formulated the following Implementation Guidelines for Promoting Energy Conservation and Carbon Reduction (hereinafter, ‘the Guidelines’) to carry out the Taiwan government’s energy conservation and carbon reduction policy, facilitate the reasonable and efficient use of energy, reduce energy costs, achieve energy conservation goals, and protect the safety of equipment.

2. Detailed Actions

(i) Establishing the Energy Conservation Facilitation Team (hereinafter, ‘the Energy Conservation Team’):

1. The positions of Convener and Vice-Convener shall be held by the Vice President and Dean of General Affairs of the University, respectively.

(1) To oversee the formulation, delivery, and review of outcomes of the University’s energy conservation goals and plans

(2) To plan and advance measures, education, and promotion pertaining to energy conservation

(3) To review and improve the campus-wide consumption of water, electricity, and fuel

(4) To oversee the normal operations of energy conservation facilities

2. Constitution of the Energy Conservation Team: The Energy Conservation Team consists of the Dean of Academic Affairs; Dean of Student Affairs; Dean of General Affairs; Dean of Research and Development; Chief Secretary; Director of the Accounting Office; Director of the Personnel Office; Director of the Center of Environmental Protection, Safety, and Health; Head of the Student Service Section; Head of the Student Housing Service Section; Head of the Extracurricular Activities Section; Head of the Construction and Maintenance Section; Head of the Resource Procurement Section; and two

student representatives (nominated by the Autonomous Student Association).

3. The Energy Conservation Team shall appoint the Head of Construction and Maintenance Section as Executive Secretary, whose role is to assist the Convener in executing and coordinating related matters. Staff who will undertake work related to the Construction and Maintenance Section shall also be appointed as Energy Administrators.

(ii) University Divisions and Their Respective Roles

1. Office of General Affairs: The Construction and Maintenance Section is responsible for proposing energy conservation measures and plans, planning an annual budget for the regular maintenance of equipment, outsourcing and operating energy conservation works, and implementing and reviewing energy conservation initiatives with regard to public water and electricity amenities on campus. The Resource Procurement Section is responsible for implementing and reviewing energy conservation initiatives with regard to campus landscape, conference venues, student restaurants, and the Guest House; compiling the monthly electricity, water, and fuel (including gasoline, diesel, and natural gas) bills across all campuses for the Energy Conservation Team to review and analyze; and implementing and reviewing energy conservation initiatives with regard to the Teaching Staff Quarters and general classrooms.
2. Office of Student Affairs: The Student Housing Service Section is responsible for implementing and overseeing energy conservation initiatives with regard to the Student Dormitories. The Student Service Section is responsible for providing students with life education and coaching with regard to energy conservation. The Extracurricular Activities Section is responsible for implementing and overseeing energy conservation initiatives with regard to the Student Activity Center and the venues for student club activities.
3. The Center of Environmental Protection, Safety, and Health, College of Extension Education, Library, Department of Athletics, various Colleges, and other Divisions are responsible for implementing and reviewing their respective energy conservation initiatives.

(iii) Work Items and Implementation Principles of Energy Conservation

1. Electricity Conservation Measures

- (1) Each College, Department, and Institute shall conduct annual reviews of the quantity and installation locations of their apparatus and equipment and then repurpose them for public use.
- (2) Reading rooms, libraries, self-study rooms, and other venues shall only open partially when the number of users is low.
- (3) Personnel of all Divisions must turn off any air-conditioning, lighting, electrical appliances, and other devices no longer needed at any time with respect to the actual conditions of use when leaving the office, research room, classroom, or laboratory. Computers and peripherals should be cut off from power when leaving for extended periods of time.
- (4) Personnel of all Divisions should keep track of the public lighting and air-conditioning systems on their respective floor or area at any time. Any age-related deterioration or failure of lamp tubes or air-conditioning malfunction shall be reported immediately to the Construction and Maintenance Section for repair.
- (5) Personnel of all Divisions shall not use the University's electricity for purposes other than performing official duties. Any tripping of the circuit breaker, damage to electrical equipment, and other problems caused by such usage shall be compensated for at cost and shall warrant disciplinary action in writing.
- (6) For the Student Dormitories, lights, electric fans, and air-conditioners in bedrooms vacated by all occupants must be turned off at the time of vacating. Any tripping of the circuit breaker, damage to electrical equipment, and other problems caused by leaving such lights, electric fans, and air-conditioners running for a prolonged period shall be compensated for at cost. The Student Housing Service Section shall assign personnel to conduct regular inspections, levy a penalty on anyone who leaves the lights, electric fans, and air-conditioners on, and submit

the list of violators to the Construction and Maintenance Section under the Office of General Affairs to be included in the Energy Conservation Report.

- (7) Information on the best time to use the instantaneous electric water heaters installed in the Student Dormitories shall be disseminated. For the purpose of saving energy, such water heaters shall not be used arbitrarily unless in the case of insufficient night-time supply of hot water from the boilers or for use by students with physical discomfort.
- (8) All electrical wiring within the dormitory areas shall not be extended or altered by residents without permission. Any violation shall be addressed in accordance with the rules and regulations of the Student Housing Service. Anyone who causes any damage to equipment or accident as a consequence of such extension or alteration shall be liable for compensation.
- (9) Walking shall be encouraged. The use of elevators shall be prohibited for the first three floors. Premises with two elevators may suspend one of the elevators at times outside of the peak commute hours for staff.
- (10) The General Affairs Section shall coordinate the switching of water dispensers across all campuses of the University (with the exception of the Student Dormitories) to energy-saving mode during nighttime (22:00–07:00). The on-campus supply of drinking water is intended for teachers and students on the campuses only. Drinking water shall not be taken off-campus for at-home consumption.
- (11) Computer servers certified by the Green Mark scheme shall be used. To reduce the loss of standby power, the University may automatically switch off the main power when the computers are not in use for a prolonged period.
- (12) The computer servers of each Division shall, in principle, be concentrated in a single room for storing information network servers within the same building as the Division to avoid the unnecessary increase in electricity consumption arising from the continuous operations of air-conditioners distributed across multiple locations.

- (13) Independent electric meters shall be installed for the construction sites of construction and maintenance works, units undertaking outsourced operations, and any special use of electricity. Monthly readings of electric meters shall be performed for cost calculations and sharing. Energy conservation goals shall also be established to facilitate oversight and evaluations.
- (14) New constructions, extensions, reconstructions, and repair works should adopt electricity-saving plans and designs and prioritise the installation of solar power generators to save energy, increase the use of renewable energy, and reduce the peak electricity demand.

2. Lighting Conservation Measures

- (1) Streetlights, floodlights, landscape lights, and other lighting systems on campus shall be regulated with a timer based on the actual conditions of use. The Construction and Maintenance Section shall adapt the on and off times of such lighting systems to the duration of daylight in each season.
- (2) Infrequently used locations, including lavatories and pantries, shall adopt automatic lighting devices. Locations with a lower lighting demand, including corridors, staircases, basements, and passageways, shall be fitted with automatic sensors, switch off alternate lights, or reduce the number of light tubes as appropriate. Lights can remain switched off if there is sufficient brightness during the day.
- (3) The light fittings used by each Division shall be switched on or off on a by-area or by-group basis in accordance with the divisions defined by the Construction and Maintenance Section and replaced with energy-saving models gradually on an annual basis as appropriate. Personnel of all Divisions are encouraged to conserve electricity as much as possible.
- (4) General offices shall adopt the basic lighting design of 350–500 lux. However, precise tasks and venues that require exceptional light shall be fitted with additional local lighting.

- (5) Personnel of all Divisions should wipe clean all light fittings (with the exception of ceiling lights) and light tubes regularly to avoid any reduction in lighting efficiency caused by contaminants (please use dust cloths; light fittings cannot be wiped with damp cloths).

3. Air-Conditioning Conservation Measures

- (1) Buildings fitted with a central air-conditioning system or box-type air-conditioners shall suspend their air-conditioning units for 10 minutes every hour on a by-area basis as appropriate. Such air-conditioning units shall also be unloaded in order of importance in conjunction with the Campus Electricity Monitoring System. Such monitoring equipment and its controls are planned and managed by the Construction and Maintenance Section under the Office of General Affairs.
- (2) Offices, meeting rooms, classrooms, and other spaces shall be controlled at a comfortable temperature (26–28 °C) and air-conditioned in combination with electric fans as necessary. When air-conditioning units are operating, doors and windows should be closed to prevent the leakage of cool air or infiltration of hot wind.
- (3) Central air-conditioning systems should be maintained regularly to reduce dripping from the cooling pipes and waste of energy. The Construction and Maintenance Section should regularly replace any old insulation pipes.
- (4) Prior to deploying additional air-conditioning units, each Division should fill in documents regarding the quantity, specifications/model, purpose, location/position, area of space occupied, source of funding, reasons for additional deployment, description of purpose, and other matters related to the additional units. After such documents are reviewed and deemed accurate by the responsible units of the Office of General Affairs, including the undertaking units, Procurement Unit, and Property Management Unit, the Division can proceed to apply for procurement and installation. The application form for the additional deployment/replacement of air-conditioning units for all Divisions of the University can be found in Appendix 2.

4. Water Conservation Measures

- (1) All newly constructed or renovated lavatories in campus buildings shall be fitted with water-saving toilets and taps only. Existing lavatories shall be refitted with water-saving toilets and taps on an annual basis.
- (2) Each Division shall use its feed-water equipment sparingly and turn it off at any time. If any leakage is identified, the Construction and Maintenance Section should be notified for repair.
- (3) If any toilet or washbasin in a public lavatory is found to be leaking, personnel of all Divisions should attempt to turn off the water supply immediately and notify the Construction and Maintenance Section for repair.
- (4) Outdoor taps are available on campus for the purpose of performing official duties and shall not be used to clean private vehicles or for any other purposes.
- (5) The automatic sprinkler systems on campus are managed and controlled by dedicated personnel from the Resource Procurement Section.
- (6) The water heating systems in the Student Dormitories are fitted with solar collector panels. The boilers are activated regularly (15:00–24:00) to supply hot water for showering. The same controls are applied to the residences for postgraduate students. Washing one's clothes with hot water in the bathroom is strictly forbidden. When washing clothes in the laundry room, the water tap should preferably be adjusted to a low-to-moderate flow.

5. Measures in Environmental Protection and Education

- (1) Recycling efforts should be carried out for recyclable resources. All teachers, staff members, and students should tie in with the University's efforts and engage in the sorting, recycling, and reuse of resources, such as scrap batteries, rubber bands, paper containers, aluminium foil packages, PET bottles, tin and aluminium cans, glass, paper, and expanded polystyrene.

- (2) Lights can be flexibly switched off for one hour in the afternoon (12:00–13:00) given that doing so does not interrupt walking, teaching, experiments, meetings, or official communications, or coincide with the time of club activities and with the consideration of the Gender Equity Education Committee’s advice against excessively dim lighting for the sake of personal safety (for officers, one-to two-thirds of the lights can be switched off).
 - (3) Personnel of all Divisions should switch off or unplug electrical appliances when leaving a room or change the power outlets into switched sockets.
 - (4) All vehicles and scooters entering the campuses should turn their engines off once they are stopped for more than 3 minutes. Engine idling is prohibited on campus.
 - (5) Official documents and meeting materials should be presented in the form of emails or slide presentations where possible to minimise printing and paper consumption.
 - (6) Actions should be taken to digitise information, encourage the use of recycled paper, and make good use of second-hand paper (such as paper used on one side and second-hand envelopes). A box for collecting scrap paper with a blank side should be set up next to each printer in offices. When printing, general materials should be printed double-sided or on the blank side of reused papers where possible.
 - (7) Toilet rolls and paper towels for cleaning should be used sparingly (not for wiping hands).
- (iv) In accordance with the work items and implementation principles of energy conservation laid out in the Guidelines, all Divisions should adopt by-area management, divide venues that use air-conditioning and lighting into areas of responsibility, draw a list of persons in charge of such areas of responsibility with regard to energy conservation, and assign persons to respective areas. Appendix 3 shows the list of persons in charge of the areas of responsibility in the University’s energy conservation. The Office of General Affairs shall conduct random inspections of the efficacy of the implementation of energy conservation initiatives by each Division.

Any failure to comply with the implementation principles shall be kept on record and reported to the Energy Conservation Team for further review.

- (v) The implementation of energy conservation measures by each Division of the University shall be regularly reviewed and reported by the Energy Conservation Team. In the case of major failure in implementation, the responsible Division shall submit a review report to the Energy Conservation Team for further reporting and determination of penalty.
- (vi) Other matters not covered by the Guidelines related to facilitating energy conservation and carbon reduction measures shall be discussed and reported by the Energy Conservation Team before they can be announced and implemented.

3. The Guidelines are approved at the Administrative Meeting and submitted to the President of the University for approval prior to entering into force. Any amendment shall follow the same procedure.