

School Energy Action Checklist

The NT Government Energy Smart Buildings Policy sets a 10% overall target for reductions in NT Government departments' buildings portfolio energy use per square meter of floor area by 2011. To help schools achieve reductions in their energy use, the Schools Energy Action Checklist has been developed.

The School Energy Action Checklist list potential energy savings projects that can be implemented in schools. Implementing projects appropriate to your school buildings can help reduce school energy expenditure by 10% to 20%. One area that schools might want to look at is their air conditioning, which accounts for 60% to 70% of a school's energy consumption and offers the greatest scope for achieving energy cost savings.

Monitoring energy usage is a vital component of energy management – you can't manage what you don't measure. Schools should record their energy usage by charting meter readings on a regular basis or as bills are received. The energy usage chart should be displayed in various locations around the school and the savings that are achieved should be reported to the students and school community.

A School Energy Management Policy should also be implemented. A written energy policy will be a guide as to how you plan to improve energy efficiency and represents a commitment to saving energy. A policy includes general aims and specific energy cost and use reduction targets as well as the organisation of management resources. Actions that could be incorporated into a School Energy Management Policy have been marked (#).

For more information about energy management in schools please contact:

Building Sustainability Services

Department of Planning and Infrastructure

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Website for more energy saving tips: www.nt.gov.au/buildingsustainability

Building Sustainability Services can loan schools a light meter to measure light levels; supply "Do Not Replace" stickers to be used in delamping; supply energy awareness posters and provide plug-in 7 day programmable time switches for equipment such as photocopiers, printers, refrigerators and hot water units.

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Energy Project	Cost No Cost (N) Low (L) Medium (M) High (H)	Comments/Options	Check
Energy Management Policy			
Establish an Energy Management Policy	N	An Energy Management Policy shows high level support for energy management in the school.	
Heating, Ventilation and Air Conditioning			
Adjustment of time clocks	L	Ensure plant comes on as late as possible and switches off as early as possible each day, doing this can achieve a 2-3% saving (sometimes even more).	
Install optimised start and stop controls (or use capability already in your AC time switches)	L	Intelligent controls are available on some air conditioner calendar time switches which minimise operating times according to outdoor and indoor conditions each day.	
Check programming	L	Establish a procedure to regularly check that all public holidays and school holidays are programmed correctly. #	
Adjust temperature set points	L	Every degree of over cooling wastes energy. Principle also applies to over-heating in southern regions. Increasing the cooling temperature by 1 degree can save 2-3% of school energy use.	
Check positioning of temperature sensors	L	Check that heat producing equipment has not been placed adjacent to or in front of temperature sensors and that they are not adjacent to windows. This could lead to inaccurate temperature measures. Reposition the equipment if needed.	
Reduce after hours usage	M	Installation of split systems in staff meeting rooms and offices is often a cost effective option to prevent the use of large, central units after hours.	
	N	Encourage the use of small auxiliary air conditioning units for after hours and school holiday activity rather than override the main air conditioning plant. #	
	L	Install a key or building security card operated override switch for the main air conditioning plant to control who can turn it on after hours.	

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Reduce after hours usage			
	L	Install a push button time delay switch (an ordinary power outlet incorporating a timer) on each small air conditioning appliance so that switch will automatically turn the appliance inadvertently left on off after a predetermined time.	
	N	If practical arrange for the cleaners to work as soon as classes finish. Cleaners that work at other times often override the air conditioning system (and turn on the lights) at considerable cost to the school.	
Decrease demand	H	Improve the building envelop thermal properties. For example, under-insulated roofs can be painted with reflective white paint and shading provided to walls and windows.	
Reduce usage	N	When it is comfortable outside, switch off heating or air conditioning and open the windows (if possible). [#]	
Maintenance	L	If you believe that the air conditioning or heating system is not running optimally, you should contact the air conditioning contractor responsible for your school.	
	L	Regularly replace or clean all air conditioning filters including those in small room air conditioners and split systems.	
Lighting			
Use day lighting	N	Encourage the use of natural light and switching off of lights where possible. [#]	
	L	It may be feasible to automatically switch off perimeter lighting when sufficient daylight is present.	
Turn off lights	N	Turn off lights in rooms that are not in use saves energy. If lights are turned off for an additional hour each day, 1% of the schools energy usage can be saved.	
Replace lamps with more efficient lamp types	L	Replace incandescent lamps with compact fluorescent; replace 50 watt halogen lamps with 35 watt halogen lamps; replace halogen lamps with compact fluorescent or LED alternatives; and replace mercury vapour with metal halide lamps.	

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Install Lighting Power Controls	M	Lighting power controls can be installed in lighting circuits which reduce lighting energy use by about 30% whilst only reducing light levels by 15%.	
Carry out delamping	N	Some lamps in light fittings can be permanently removed in areas which are over lit compared with Australian Standard lighting levels. Delamping can result in a 2-3% saving in school energy use.	
Install centralised lighting time control system	M	Automatically turns lights off at a set time and prevents them being left on after hours.	
Install classroom lighting time controls	M	Install dial-up clockwork light switches or occupancy sensors in classrooms.	
Install local automatic control in sporadically used rooms	M	Ideal for rooms that are not in constant use, examples include occupancy sensors in staff or meeting rooms and time delay switches in store rooms.	
Install Photoelectric cells for security lighting	M	Security lights can be controlled to come on and go off according to light levels rather than be controlled by conservative time switch settings.	
Label light switches	L	Label light switches so it is clear which switches control which lights and only those needed can be switched on.	
Control assembly area lighting (and fans)	L	Assembly area lighting and fans should be controlled by lockable switches to avoid unauthorised and unnecessary use.	
Consider surface colour and lighting	N	When repainting, select light colours and avoid matt and heavily textured finishes that absorb light and check if light levels increase. Delamping may become feasible.	
Behaviour Change Campaign			
Establish a switch off campaign	N	Establish a 'switch off' campaign to encourage staff and students to turn off lights and equipment when not in use. #	
	N	Display 'switch off' checklists for recess, lunch and at the end of the day in each classroom to ensure lights, computers and other equipment are turned off. #	

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	N	Develop a 'switch off' checklist to be implemented at the end of each term, get staff and students involved in switching off for the holiday period. #	
	N	Appoint class energy monitors to turn off lights. #	
	N	Establish procedures to ensure new or temporary staff are told about the schools 'switch off' policy and procedures. #	
	N	Establish a 'switch off' checklist for the school canteen. #	
Appliances and Equipment			
Turn off computers and office equipment	N	Turn computers and office equipment that are not in continuous use, when not being used. Turn off at the end of the day either manually for via the use of time switches. Note that printer and photocopier 'power save' modes often save little energy. #	
	N	Activate the Energy Star function on all computers to put them into sleep mode after a period of inactivity. Refer to the Building Sustainability Services website for more information. #	
	N	Turn computers and equipment off at the power point where possible to save stand-by power use.	
Control the use of boiling hot water units	L	Install plug-in time switches on boiling hot water units. If staff are uncomfortable overriding the timer for the boiling hot water unit, provide a kettle for after hours use.	
Review refrigerator numbers and condition	N	Reduce the number of refrigerators in the school.	
	L	Review refrigerator age, condition and condition of refrigerator seals. Replace seals where needed.	
	N	New refrigerators are much more efficient than old units. When purchasing new refrigerators purchase the most energy efficient model available for the size you require and your budget (5 or 6 star energy rating refrigerators are recommended) and think if freezer compartments are necessary.	
	N	Review the thermostat setting for the refrigerators.	

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	N	Clean out refrigerators and switch them (propping doors open) off during the school holidays.	
	N	Consider turning refrigerators off after lunch each day. Note there is no technical reason why this approach will impact on refrigerator life as compressors cycle on and off during normal operation.	
	N	Discourage frequent opening of fridge doors. #	
Control Hot Water Systems	L	Lower thermostat temperature setting of storage hot water units from 75°C to 60°C (an electrician or plumber may be required).	
	N	Turn off all unneeded hot water heaters.	
	N	Reduce the operating time of hot water heaters that need to be on through use of a time switches.	
Turn off the PA System	N	Turn the PA system off at the end of the day and during school holidays.	