Greening your club checklist

Courtesy of FFSA

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Government of South Australia
Office for Recreation and Sport

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Please note: The Greening Your Club Checklist does not commit state or local government, sporting groups or any other organisation to provide, improve or allocate resources to facilities.

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Introduction

Sustainability is a mainstream issue and registered clubs recognise that they have an important role to play. The first step towards sustainability is making sure you comply with the law. The second step involves reducing your environmental impacts. While this guide is intended to help you solely with step two, you should review your compliance status first.

If you're involved in managing a club, *Greening your club* is designed to give you some concrete advice on how you can help your club reduce its impact on the environment. Beyond making a positive contribution to the environment, there are other benefits for clubs that take a sustainable approach towards their operations.

Cutting energy and water are really just business improvement initiatives. Often, these initiatives save money and in many cases projects pay for themselves over time.

An important first step is to ensure your club meets all its legal requirements with respect to the environment. South Australia has a number of laws to protect the environment and provide guidance to business. The *Environment Protection Act 1993* is the main piece of SA environmental legislation.

In some cases breaking environmental law carries serious penalties, even if you did not intend to cause damage or pollution. To protect your club from prosecution and maintain its reputation, make sure everyone in your business (including staff, contractors and subcontractors) are aware of their environmental responsibilities.

For more information, contact EPA South Australia on (08) 8204 2004 or freecall 1800 623 445, visit their website **www.epa.sa.gov.au/environmental_info/water_quality/legislation_and_programs** or contact your local council.

Clubs are frequently expected to play a leadership role in the communities they serve. By proactively implementing a responsible environmental management plan, your club has a real opportunity to improve its standing in the community. Some clubs have even won environmental awards for the work they have done.

Having strong environmental credentials and a good standing in the community not only helps attract and retain members, it boosts staff morale and makes your club a more attractive place to work.

Developing an environmentally friendly facility also fosters a healthier and happier workplace, making your club more enjoyable for members.

Your club's environmental initiatives can be showcased in your marketing to promote your club as a responsible, environmentally aware organisation.

Why is sustainability important?

A growing number of registered clubs are recognising that their operations have a significant environmental impact through their use of electricity and water.

Electricity

Most of the electricity in South Australia comes from the chemical energy of fuel such as natural gas, oil or coal, which produces large quantities of carbon dioxide, the major greenhouse gas that contributes to global warming.

Water

With continuing water restrictions in South Australia and little prospect of predictable rain, everyone in the community needs to reduce water consumption as much as possible, including businesses.

Waste

But sustainability is more than just being efficient with resources.

Beyond these issues, clubs can find sustainability projects in a variety of areas that will benefit the club, the community, and the environment. Examples include:

- sports ground management
- community engagement
- environmental planning
- purchasing and supply chain
- staff training
- chemicals management
- environmentally-sensitive club design and refurbishment.

The Office for Recreation and Sport recognises that reducing the impact South Australian clubs have on the environment could have a positive long-term benefit for the reputation of the sport and recreation industry.

Taking the first step

So how do you go about taking action? The first step is to understand options available and to work out what's feasible for your club.

We suggest reading through the steps in this brochure so that your club can work towards reducing impacts on the environment.

Step 1. **Fix your leaks**

Step 2. **Switch off**

Step 3. **Buy and install efficient consumables**

Step 4. **Maintain, monitor and manage**

Step 5. **Upgrade your lighting**

Step 6. **Reduce water use!**

Step 7. **Update your Air Conditioner plant (or retrofit)**

Step 8. **Upgrade your Air conditioner plant**

Step 9. **Tell everyone**

Not all of the opportunities listed will be feasible for your club, so it's important to conduct an investigation into the appropriateness, cost, financial return and the associated environmental benefits of each opportunity before proceeding.

Some initiatives you can carry out yourself, but for bigger projects you may need to contract a specialist service provider to determine the viability of the project and give recommendations on how to proceed.

Finally, a checklist has been included, to allow you to monitor progress on your journey.

Step 1. Fix your leaks

Often the most effective actions you can take to improve your environmental footprint are also the most obvious.

Review and update air conditioner settings

Having the air conditioner temperature set too high or too low is unnecessarily wasteful, as is running air conditioning outside business hours. For example, if you changed your air conditioning setting from 17°C to a comfortable 21°C to 22°C, you could save 1.5 tonnes of greenhouse gases a year.

Ensure your air-conditioning ducts don't leak

Leaking duct work means that the air conditioning system has to work extra hard to compensate for heat loss or gain. Ensure that duct work is not leaking, as this greatly reduces the effectiveness of your air conditioning system.

In many clubs, the ceiling space is used as the return air plenum. This is inefficient, since the return air picks up heat from the roof space, which is often inadequately insulated, and therefore affects the efficiency of the whole air conditioning system.

Replace cool room and refrigerator door gaskets

If your cool room or refrigerator is not properly insulated, cool air escapes, meaning more energy is required to keep things cool. For many energy audits, it was noted that many refrigerator and cool room door gaskets were torn or damaged or completely missing.

At one club, it was estimated that meaningful savings could be achieved simply by installing gaskets on the sliding doors of one cool room. Greenhouse gas savings: three tonnes a year.

Fix air-conditioning cooling tower leaks

Air conditioners, like any plant, need to be properly maintained to run efficiently and water tower leaks should be attended to as quickly as possible. Air conditioning leaks can also be a health hazard. A pool of standing water can become a breeding ground for bacteria and if it's in the vicinity of the air intake grills, the bacteria can enter the club's air supply.

Fix leaking taps

A typical leaking tap dripping 10 litres of water an hour wastes more than 89 kilolitres of water per year. If you notice a leaking tap, get it fixed.

Keep lids on containers

Even minor knocks can topple a container and waste large quantities of product or liquids, which is why it's important to keep lids on containers. In the case of many chemicals, such as solvents, much of the product can be lost through evaporation if lids are left off. Chemicals can also pose a danger to staff, to members, and to the environment if spilt.

Step 2. Switch off

If it's not in use, turn it off. You'll be surprised by the savings that can be achieved by following this very simple principle.

Install time switches on bain-maries

Many clubs use bain-maries to keep food warm and some clubs leave the bain-maries on at all times. Significant energy savings can be made by installing a timer switch so that the bain-maries were only turned on when required. Greenhouse gas savings are about 22.4 tonnes a year.

Don't leave taps running unnecessarily

Taps should not be left on when unattended (for example, running water over frozen food to defrost it). This type of waste can be controlled by installing sensors to turn off taps at basins and sinks or by fitting trigger nozzles on hoses so they must be physically held to release water.

Adjust the timing of hot water systems

Your club's hot water systems should heat water only when it is needed. Don't leave water heaters on if hot water is not going to be needed for some time. If parts of the club are closed during weekends, for example, ensure that your building management system will turn off water heaters and hot water circulation systems in those areas or install a seven-day-week time clock.

Screen off rooms not requiring air conditioning

Most club bistros or restaurants operate only during lunch and dinner times, so there's no need to air condition them for the same duration as other parts of the club that are constantly occupied.

Step 3. Buy and install efficient consumables

Don't waste money on buying yesterday's technology.

New technology is often a little more expensive to buy up front, but with the recommendations listed below you will save during the lifetime of a product – often within a year of introducing it.

Replace non-dimming incandescent light bulbs with compact fluorescent lamps

Standard incandescent lamps are the oldest variety of lighting technology and also one of the most inefficient types of lighting available. They typically convert only 15 per cent to 20 per cent of the input electricity into visible light.

The remaining portion is given off as heat energy, which adds to the air conditioning system and increases operating costs. The lifespan of an incandescent lamp is only about 1000 hours, which means that they need regular replacement and are therefore expensive to maintain.

Compact fluorescent lamps (CFL) are a much better option and fit into the standard bayonet or screw-in light fitting. CFLs consume much less electricity than incandescent lamps while providing the same amount of light – an 11W CFL is equivalent to a 60W incandescent lamp.

Because CFLs give off less heat than incandescent lamps, they place less load on the air conditioning system, which results in further electricity savings. CFLs have a lifespan in excess of 6000 hours, so that while they are more expensive than incandescent lights to buy, they are actually cheaper when you factor in their much longer life, reduced maintenance costs and lower electricity consumption.

By replacing incandescent lights with CFLs, you could potentially save 49.4 tonnes of greenhouse gases a year, plus an additional 1.8 tonnes saved as a result of reduced load on your air conditioner.

Replace 50w downlights with 35w infrared coated downlights

Many people wrongly think that low-voltage downlights (sometimes known as dichroic or halogen spotlights) are environmentally friendly. They're not. The light generated by a downlight is quite focused, so a lot of them are required to light up larger rooms.

Low voltage downlights also have comparatively short lifetimes, with the common 50W lamp burning out within 3000 hours, meaning increased purchase and maintenance costs. A new, more efficient 35W infrared coated (IRC) lamp, which provides the same light as a 50W downlight, has a lifespan of approximately 5000 hours.

Although 35W IRC lamps are 25 per cent more expensive than the regular 50W downlights, they have a 67 per cent longer lifetime, which means replacement costs are actually lower.

Given that downlights are often installed in banks of several dozen, it's best to replace them during a scheduled bulk replacement, so that the initial capital cost is kept to a minimum. Due to reduced heat from the more efficient lights, there is also a reduction in the air conditioning load and therefore added energy savings.

Use concentrated cleaning chemicals

The less packaging you use, the less there is to throw away. Concentrated cleaning chemicals use less packaging than bulk, dilute equivalents. This means you can use less of the chemical and create less waste.

Concentrated cleaning chemicals also take up less space in the storeroom. However, staff must be trained to use smaller quantities; otherwise, they may simply use the same amount.

Remember, chemicals should be stored in a bunded area (an impervious area surrounding dangerous chemicals) to prevent spills reaching the storm water system or soaking into the ground. Outdoor bunded areas must have a roof.

Both bunding and roofing must meet EAP and WorkCover requirements. Penalties apply for failing to meet your responsibilities in this area.

Contact the EPA or visit their website to obtain the Bunding and Spill Management Guidelines: http://www.epa.sa.gov.au/xstd_files/Waste/Guideline/guide_bunding.pdf

Step 4. Maintain, monitor and manage

There is little point in having a plan unless it's maintained, monitored and managed to ensure it's achieving its goals.

Upgrade your club's maintenance schedule

Maintenance contracts are often not properly specified or supervised and even though the maintenance might be carried out according to industry standards, there are often significant opportunities to save energy by getting an independent specialist to supervise current practices and rewrite the maintenance schedule manuals to deliver a more energy savings oriented maintenance program.

A typical club could save about five per cent of its annual electricity consumption by implementing an upgraded maintenance program.

Install sub-meters and monitor energy and water consumption

If you can't measure it, you can't manage it. Building owners around Australia are increasingly installing electricity, gas and water meters connected to a management system - such as their building management system (BMS) within their buildings - so they can tell precisely where energy and water is being used.

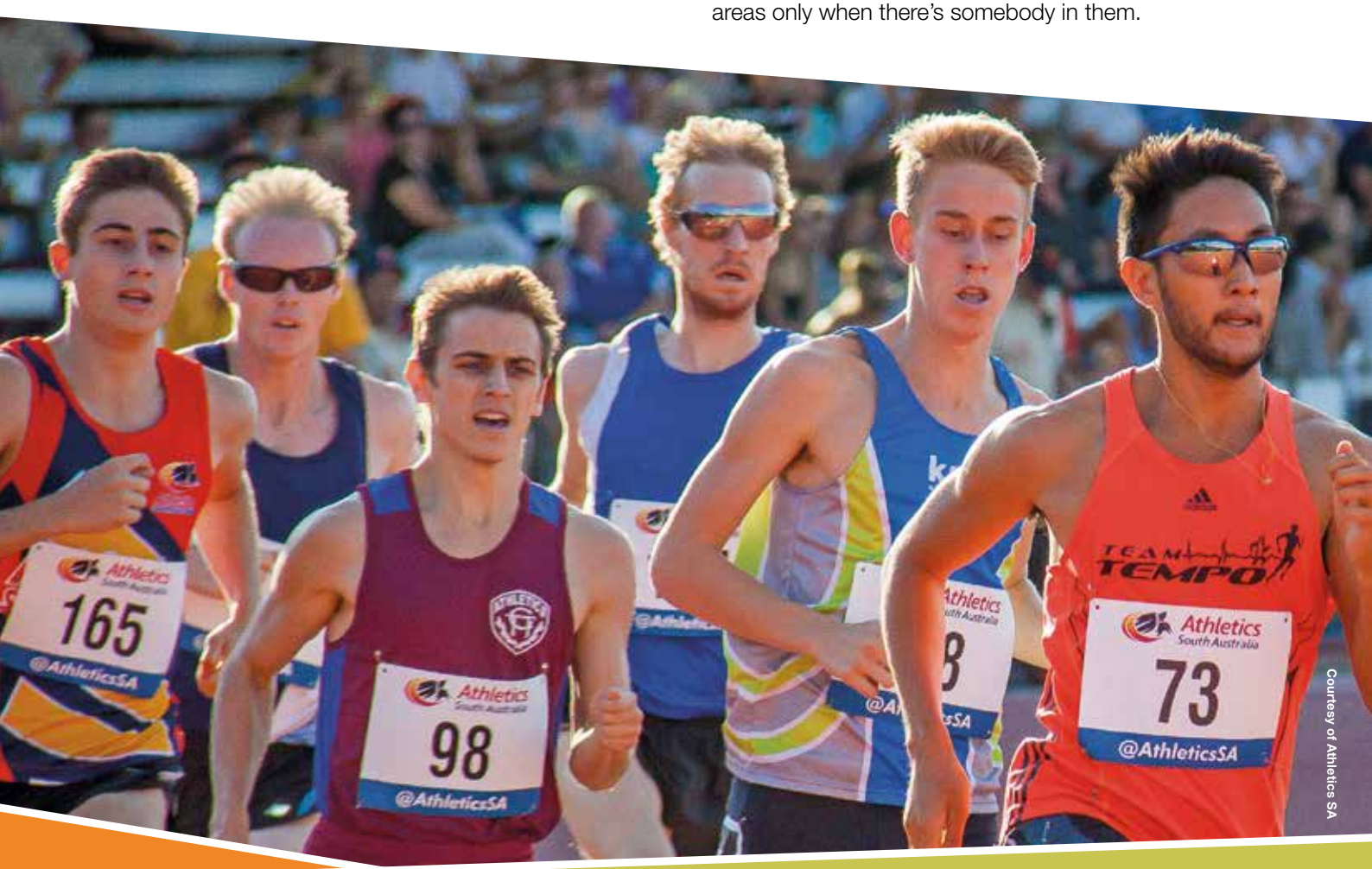
These 'sub-meters' allow building owners to know when usage by specific systems and areas is greater than historic or predicted performance and are an essential element of your energy and water reduction strategy.

Step 5. Upgrade your lighting

Taking a step beyond energy-efficient light bulbs, new technology provides opportunities to improve the energy efficiency of your club's lighting system.

Install occupancy detectors

There is little benefit in lighting unoccupied areas and an occupancy detection system allows you to light areas only when there's somebody in them.



Courtesy of Athletics SA

Occupancy detection systems require minimal changes to existing wiring and involve the installation of a motion detector in the ceiling, which is connected to the lights allocated to its 'zone'.

Whenever someone enters the zone, the detector automatically switches on the lights within that zone. When no movement is detected for a set period, say 10 minutes, the detector switches off the lights.

Due to the lower heat load through reducing lamps' operating hours in these areas, there is also less load on the air conditioning system.

Install voltage reduction units for fluorescent lamps

Voltage reduction units (VRU) allow the full voltage to develop across a fluorescent lamp for starting, but then gradually reduce the voltage, resulting in up to 25 per cent reduction in power consumption.

There is a minor drop in the light level, but this is not significant, usually ranging from 10 per cent to 15 per cent. Fitting a VRU to a kitchen area, has the potential to save significant amounts of electricity – approximately one tonne of greenhouse gases a year.

Replace neon strip with light emitting diode strip lighting

Many clubs use neon strip lighting to help generate attention. Neon strips typically consume more than 9W/m and have a lifespan of 44 000 hours. By comparison, Light Emitting Diode (LED) lighting strips consume 6W/m and have a lifespan of 60 000 hours.

A club with 100m of strip lighting can save 1720 KWh/year by changing to LED strip lighting. Greenhouse gas savings: 1.8 tonnes a year.

Replace dimming incandescent light bulbs with compact fluorescent lamps

Dimming incandescent lights can be replaced with compact fluorescent lamps, although new controls also need to be installed at the same time. This means you need to call in a qualified electrician to upgrade the lighting.

Refer to Step 3 - buy and install efficient consumables for more information.

Step 6. Reduce water use!

Install flow restrictors for basin taps

If fully turned on, an ordinary tap will use up to 20 litres of water a minute. A flow restrictor is designed to regulate water flow and models are available that will reduce the flow rate by up to 84 per cent. By reducing water consumption, flow restrictors also reduce the energy required for hot water heating.

Install AAA shower heads

If you offer shower facilities at your club, you may be surprised to know that an inefficient showerhead can use 20 litres of water every minute, compared to an AAA-rated showerhead that uses just nine litres of water a minute, yet still provides comfortable showers.

Install dual flush systems

If your club has older-style single-flush toilets, each flush may be using up to 13 litres of water. By comparison, modern dual flush toilets require just six litres for a full flush and three litres for a half flush. A dual flush system can be retrofitted to older-style cisterns so that while the full flush still uses the same amount of water, the half flush will use only three litres.

Install or increase rainwater-harvesting capability

Don't let rainwater go to waste, particularly if your club has a large roof area that can be used to collect water and space for storage tanks. Capturing rainwater is often simply a case of diverting an existing downpipe to a water tank.

The collected rainwater can be used for irrigating gardens or for washing bins. In some cases, rainwater can also be used to flush toilets and urinals, though this depends on whether the existing pipe work can be separated into potable and non-potable water.

Step 7. Update your Air Conditioner plant (or retrofit)

Is your air conditioning or building control system state of the art? By upgrading or retrofitting new technology, you may be able to achieve much more efficient performance, while using the same or less energy.

Install energy-efficient drives

By installing energy-efficient variable speed drives on air conditioning pumps and fans, you can better control your air conditioning system. You don't need to run the system all day, but many air conditioning systems are designed with only two speeds: off or 100 per cent on.

Variable speed drives save a lot of energy for only a modest capital investment. They usually offer a great return on investment.

Similarly, electronic expansion valves cut energy use in reciprocating chillers during part-load conditions, which is most of the time. They, too, deliver good savings for a modest investment.

Take advantage of economy air cycles

An economy air cycle mode enables an air conditioning system to utilise 'free' cooling from the atmosphere when climate conditions allow. In this mode, the air conditioning system simply pumps fresh air directly into the club, with no cooling.

If your air conditioner doesn't have an economy air cycle, it may make sense to upgrade the existing system so that it does. If your current air conditioner has an economy air cycle, review the settings to ensure it is operating correctly.

Upgrade building management system controls

A club can typically save about five per cent of its annual electricity consumption by upgrading its BMS and following a number of BMS control strategies designed to ensure high efficiency.

For example, some of these strategies include optimised start and stop, optimisation of timing schedules for the lighting and air conditioning systems, setting appropriate set points for the air conditioning system and switching off lights after hours.

Step 8. Upgrade your Air conditioner plant

Next time you're replacing or refurbishing your club's plant, you may want to consider some energy-efficient options.

Replace packaged air conditioning units with central plant systems

When it comes time to replace some or all of your club's air conditioning system, consider upgrading from conventional packaged air conditioning units to a high-efficiency central plant air conditioning system.

Central plant systems might cost a little more, but the additional cost is easily recouped over the life of the plant. Maintenance costs may well be lower, too, and indoor air quality will be superior.

Retrofit air-to-air heat exchangers on air conditioning units

Heat exchangers save the energy consumed by air conditioning units. This well-proven technology works by reclaiming energy from the air being exhausted from the conditioned space. A number of Australian-made products are available for such use.

Install a smaller hot water boiler for summer

The demand for hot water varies greatly between summer and winter, so what's needed for winter may well be too much for summer, leading to wasted energy. Consider installing a smaller boiler for warmer months.

Install a desuperheater to supply hot water

Your club's air conditioning and refrigeration systems extract heat from the club and dump it outside the building. How much smarter would it be if you captured that wasted heat?

A desuperheater does just that. It takes waste heat and preheats water for your hot water system. These systems are often highly cost-effective.

Step 9. Tell everyone

If you want to energise your environmental management program, you'll need the support of all the key stakeholders – staff, management, members and the wider community. A good communications strategy can help you generate and keep this support.

Tell your staff

To ensure your program's success, you'll need to train your staff in water and energy conservation and waste reduction and recycling. Report the progress and successes back to them and reward them if appropriate.

Tell your members

You'll need to tell your members so that they know how they can participate in the environmental management program.

Tell other stakeholders

Through its environmental management program, your club can build a green image in the community, which can have a real value for your club's brand. Make sure you highlight your club's key achievements in the local media and in your advertising.

Funding options

These 10 steps are just some of the many ways clubs can become 'green'. While many of the steps require minimal cost, some can be costly.

The Office for Recreation and Sport has two funding programs for eligible organisations to help fund new or upgrade existing sporting facility infrastructure to reduce utility usage:

Active Club Program - Provides assistance to active recreation and sport clubs with minor facilities and programs and equipment.

Community Recreation and Sport Facilities Program - Provides assistance to eligible organisations to plan, establish or improve sport and active recreation facilities.

For further information:

Call: Funding Services on 7424 7708
Email: orsgrants@sa.gov.au
Visit: ors.sa.gov.au/funding

Checklist

Fix your leaks

Action	Required (yes/no/n/a)	Assigned to	Completion date
Review and update air conditioner settings.			
Replace cool room and refrigerator door gaskets.			
Fix water tower leaks.			
Adjust timing of the hot water systems.			
Keep lids on containers.			
Adjust portion sizing.			

Comments:

Switch off

Action	Required (yes/no/n/a)	Assigned to	Completion date
Install time switched on bain-mairies.			
Switch off electrical appliances when not in use.			
Don’t leave taps running unnecessarily.			

Comments:

Buy and install efficient consumables

Action	Required (yes/no/n/a)	Assigned to	Completion date
Replace non-dimming incandescent light bulbs with compact fluorescent lamps.			
Replace 50W down lights with 35W infrared coated (IRC) down lights.			
Use concentrated cleaning products.			

Comments:

Maintain, monitor and manage

Action	Required (yes/no/n/a)	Assigned to	Completion date
Upgrade your club's maintenance schedule.			
Install sub-metres and monitor energy and water consumption.			
Conduct regular bin audits to ensure your recycling plan is working.			

Comments:

Minimise waste

Action	Required (yes/no/n/a)	Assigned to	Completion date
Separate, capture and recycle valuable resources.			
Introduce paper recycling.			
Separate food waste from the general waste system.			
Develop an environmental purchasing policy.			
Negotiate with suppliers to take back packaging.			
Introduce a waste awareness program.			

Comments:

Upgrade your lighting

Action	Required (yes/no/n/a)	Assigned to	Completion date
Install occupancy detectors.			
Install voltage reduction units for fluorescent lamps.			
Replace neon strip with Light Emitting Diode (LED) strip lighting.			
Replace dimming incandescent light bulbs with compact fluorescent lamps.			

Comments:

Reduce water use

Action	Required (yes/no/n/a)	Assigned to	Completion date
Install flow restrictors for basin taps.			
Install AAA showerheads.			
Install dual-flush toilets.			
Install or increase rainwater-harvesting capability.			

Comments:

Update your plant (or retrofit)

Action	Required (yes/no/n/a)	Assigned to	Completion date
Install energy-efficient drives.			
Ensure you have appropriate air conditioning ductwork.			
Screen off rooms not requiring air conditioning.			
Take advantage of economy air cycles.			
Upgrade building management systems.			
Install CO detectors on car park exhaust air fans.			
Install power factor correction equipment.			

Comments:

Upgrade your plant

Action	Required (yes/no/n/a)	Assigned to	Completion date
Replace packaged air conditioning units with central plant systems.			
Retrofit air-to-air heat exchangers on air conditioning units.			
Install a smaller hot water boiler for summer.			
Install a desuperheater to supply hot water.			

Comments:

Tell everyone

Action	Required (yes/no/n/a)	Assigned to	Completion date
Tell your staff.			
Tell your members.			
Tell other stakeholders.			

Comments: