

Environmental Sustainability Report 2011

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Introduction

The TAFE NSW Illawarra Institute has been implementing a formal environmental management program since late 2006 when it adopted its first Environmental Policy. Since then, the Institute has employed a permanent full-time Environmental Officer to oversee its environmental management and education for sustainability initiatives. The Environmental Officer provides executive support to the Institute's Environmental Management & Education Committee, which meets once a Term. This Committee has representatives from campus management, faculties, OH&S and Assets and is chaired by the MDO South Coast. In May 2008, the Institute's Board of Management approved the Institute's Environmental Management Plan 2008-2010 (incorporating environmental objectives & targets). The Plan identified objectives, targets, performance indicators and strategies for a 3-year period ending December 2010. The purpose of this report is to review the 2008-2010 Plan and document achievements and performance against the targets and strategies. This will assist with the strategic planning of the proposed new Environmental Sustainability Plan 2011-2013.

Environmental Management Plan 2008-2010

The 2008-2010 Plan was based on the ISO 14001:2004 Environmental Management System framework. It addressed the Institute's environmental objectives, targets and environmental program. The Plan covered all of the activities and operations of the Institute. In late 2010, the Yallah campus was granted third party certification for its Environmental Management System to the ISO 14001 International standard. Certification of additional campuses to ISO 14001 is being considered.

The table below outlines the environmental targets from the Institute's 2008-2010 Environmental Management Plan and a status mark and summary as to whether that target has been completed, partially completed or not completed.

Status Key:



Completed



Partially Completed



Not Completed



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Environmental Sustainability

Target	Status	Summary
<p>Develop and implement an Environmental Management System consistent with the International Standard AS/NZS ISO 14001:2004 by the end of 2008</p>		<p>The necessary policies and plans have been prepared under the ISO 14001 EMS framework and implemented across the whole Institute. Additional procedures and training under ISO 14001 have been implemented at Yallah campus, where the EMS was third-party certified in late 2010.</p>  <p>Global-Mark.com.au®</p>
<p>Ensure the TAFE NSW - Illawarra Institute strives for continual environmental improvement and prevention of pollution, and continues to operate in accordance with all relevant environmental legislation and other requirements</p>		<p>Over the past 3 years, the Institute has not breached environmental legislation and continually improved its overall environmental performance each year, particularly in energy and water savings.</p>
<p>Review EMS annually to ensure it is maintained and up-to-date</p>		<p>The EMS has regularly been reviewed for currency. EMS procedures and policies are reviewed annually as part of the internal auditing process.</p>
<p>Implement mechanisms for gathering environmental data for performance monitoring, reporting and review purposes</p>		<p>Data capture systems, including Webgraphs (electricity) and online water monitoring at Wollongong campus have been implemented. Waste collections are now monitored post-2009 by Thies for the Northern district. In 2010, a wide range of environmental data was collected as part of the Sustainable Campus Group initiative. Gathering environmental data from the smaller regional campuses is difficult and needs improving.</p>
<p>Produce an annual environmental sustainability report to demonstrate environmental performance</p>		<p>A short environmental sustainability report has been prepared annually for the Institute's management committees which covered such things as savings made in energy and water. In 2010, a detailed analysis of extensive sustainability data was completed under the Sustainable Campus Group initiative.</p>



Reduce the Institute's ecological footprint annually



Although overall savings have been made every year for the past 3 years in energy and water usage, the Institute's waste to landfill is not likely to have been reduced each year. There is also no readily available tool or "calculator" to measure the Institute's ecological footprint so this needs additional work.

Participate in regular environmental activities/forums/conferences etc. to promote the Institute's environmental management leadership



Over the past 3 years the Institute has had a presence at a variety of events to promote its environmental initiatives. These events include the TAFE NSW Quality Awards in 2010 & 2008; TAFE NSW Managers Conference 2009; Australasian Campuses Towards Sustainability conference 2007 and 2009; UK Environmental Association of Universities & Colleges 2008 conference via video; Earth Hour 2008/2009/2010 (human sign made up of staff and students shown below); TAFE NSW Education for Sustainability conferences 2007/2008; Illawarra Sustainability Week etc.



Teaching & Learning

Target	Status	Summary
<p>Deliver environmental sustainability awareness talks to all new staff and to key existing staff.</p>		<p>Every year since 2007, the Environmental Officer has delivered an induction talk on environmental sustainability to new staff attending the Institute's New Staff Orientation sessions. Environmental awareness talks have also been delivered to the BoM, all Yallah campus staff and some student classes as part of new student inductions. Senior Staff Forums on environmental sustainability were delivered at Wollongong and Goulburn campuses in late 2007. More recently in 2010, a number of workshops were held via videoconference across all IIT campuses titled "Green Skills @ Work". An online version of this training was also available in Moodle. Around 100 staff completed this training course. An additional 80 teachers were enrolled, trained and assessed as competent in a nationally accredited sustainability unit "Participate in environmentally sustainable work practices".</p>



<p>Host environmental activities/events that are accessible to staff and students in accordance with an agreed annual calendar of events</p>		<p>Every year since 2007, the Institute has prepared an Annual Calendar of Environmental Events which identifies what events and activities the Institute will support that year. The main events supported have been Earth Hour, World Environment Day and Sustainability Week Illawarra. Sustainability Week was celebrated in partnership with HATCH, Wollongong Council and Sydney Water.</p>
<p>Produce and display a range of promotional and informative environmental materials using various tools (e.g. posters, online, etc.) to encourage environmental responsibility</p>		<p>A range of informative environmental resources have been developed and/or distributed around all the Institute campuses over the past 3 years. A number of posters and stickers have been distributed to encourage staff and students to save energy and water (see examples below).</p> 
<p>Deliver training in Environmental Spill Response to key staff as required</p>		<p>In 2007, training in “Level 1 Spill Response” was delivered to 30 staff by Enretech – the company that supplied the Spill Kits for each campus. Additional training in the use of spill kits was delivered by the Environmental Officer to additional staff since 2007, including cleaners at Wollongong campus.</p>
<p>Ensure all Institute strategic and business plans incorporate a commitment to environmental sustainability principles</p>		<p>The Institute’s Strategic Directions have included goals for environmental sustainability, as well as targets for energy and water savings.</p>
<p>Promote the Institute’s environmental sustainability initiatives to staff, students, external stakeholders and the community on a regular basis</p>		<p>Over the past 3 years there has been a considerable effort invested in the promotion of the Institute’s environmental sustainability objectives and targets. In 2009, the Staff and Student Engagement Strategy for Sustainability was prepared. A number of actions within this strategy have since been implemented including staff training in sustainability. Promotion of sustainability has also been via the Environmental Sustainability intranet site, Green Event</p>



		<p>promotions such as Earth Hour and World Environment Day. A number of media releases have been prepared and stories covered in the local media on such things as the Enviro Officer position; joining the Every Drop Counts Business Program; Community Water Grants; Earth Hour human sign; etc. A number of articles have also been included in media such as the Sydney Water publication "The Conserver" and other TAFE newsletters etc. In 2009, an Institute-wide staff survey identified that 80% of respondents have personally seen some improvement in the Institutes approach to sustainability and made changes to their work practices to reduce their use of energy. This indicates staff contributing to the achievement of our environmental initiatives.</p>
<p>Implement the TAFE NSW Education for Sustainability (EfS) Action Plan 2007-2010</p>		<p>A number of actions have been commenced or completed in recognition of this Plan, although there were some actions that were not implemented. The Institute formally reported to TAFE NSW on our actions towards the TAFE NSW EfS Action Plan in 2007 and again in 2010. Although the Institute initiated a lot of projects that addressed the Plan, it could be said that there could have been more work done in this area.</p>

Water Management

Target	Status	Summary
<p>Fully comply with mandatory water restrictions and trade wastewater agreements</p>		<p>Trade wastewater agreements/permits were updated for all Northern District campuses under Sydney Water in 2007. A number of Northern District campuses held Water Exemptions during water restrictions to allow for cleaning purposes. No notices or fines were issued to the Institute during the 3 years from 2008-2010. Northern district campuses now follow Sydney Water's permanent Water Wise Rules.</p>
<p>Develop a Water Savings Plan for the Institute by the end of 2009</p>		<p>Campuses in the Northern District under Sydney Water's jurisdiction were included as part of a Water Achiever report and plan in 2007 and 2008. A number of critical actions were included as part of these Water Management Reports. Water savings initiatives were also included as part of the Resource Efficiency Action Plan prepared for the whole Institute. So although a number of initiatives and actions were developed for water savings at some campuses, a whole of Institute Water Savings Plan was not prepared.</p>
<p>Reduce the Institute's total annual potable water consumption by 25% by the end of 2010 compared to 2007 levels</p>		<p>The Institute's total potable water usage in 2007 was 46,891 kL, compared to the 2010 water usage of 38,965 kL. This equates to a reduction in water usage of around 17%, which is just under the 25% savings target. Despite being on track during 2008 and 2009 to make the 25%</p>



target, a major water leak at Wollongong campus throughout 2010 was the main cause for the excess water usage. The source of this leakage at Wollongong campus has only now been detected and resolved in early 2011, so it is expected that large water savings will be made during 2011. Appendix 1 shows the water usage for the entire Institute and individual campuses between 2007 and 2010.

Energy Management

Target	Status	Summary
Develop an Energy Savings Plan for the Institute by the end of 2008		An Energy Reduction Procedure was prepared for the Institute in April 2008 as part of the EMS. A number of energy savings actions were also developed as part of the Resource Efficiency Action Plan. In 2009, the consultants HATCH prepared an Electricity Load Analysis Report for the Northern District as part of the Resource Efficiency module of Sustainability Advantage. In 2010, Hyder Consulting prepared the Institute's first Greenhouse Gas Inventory and associated Carbon Management Strategy.
Reduce total annual energy (electricity and gas) consumption and associated greenhouse gas emissions by 10% by the end of 2010, compared to 2007 levels		The Institute's total electricity usage in 2007 was 9,404 MWh, compared to the 2010 electricity usage of 8,509 MWh. This equates to a reduction in electricity usage of about 10% which was the savings target. Energy consumption also includes gas usage but unfortunately this has been difficult to measure easily. In 2009, gas usage and greenhouse gas emissions were calculated for the entire Institute for the first time as part of the Sustainable Campus Group reporting. Data collection for gas, waste to landfill, fleet vehicle fuel usage etc. needs to be improved to enable GHG emissions to be calculated and reported annually. Appendix 2 shows the electricity usage for the entire Institute and individual campuses between 2007 and 2010. Appendix 3 shows the Institute's total electricity usage over a 10 year period from 2001 to 2010. From this graph it is obvious that energy savings really became effective from 2007 onwards, as prior to that electricity usage typically increased every year.
Maintain 6% of electricity supply from GreenPower (i.e. renewable energy sources)		Under the NSW Government electricity contract for large sites (777 contract), the Institute is required to purchase a minimum of 6% of its electricity as accredited Green Power. This was the case for 12 of the 14 main campuses which obtain their electricity from Energy Australia on the 77 contract. The Yass and Queanbeyan campuses being small sites were not on the 777 contract and therefore did not purchase any Green Power prior to 2011. These campuses are now moving onto the 776 Government contract for electricity which allows for accredited Green Power.



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Neutralise greenhouse gas emissions for large public events and staff airline flights by purchasing accredited carbon offsets



There were efforts made in 2009 to make the Institute annual awards ceremony carbon-neutral. Unfortunately the event, being held at the City Beach Function Centre, was outside of the Institute's control and staff at the venue were not able to arrange this initiative. Staff airline flights have not been carbon offset (despite this only costing a few dollars for a Sydney-Melbourne return flight) mainly because the NSW Govt booking agent, Carlson Wagonlit Travel (CWT), does not have this available for DET in staff flight bookings. It is hoped that all NSW Government flights booked through CWT can be carbon-offset as a standard option in future.

Reduce greenhouse gas emissions associated with the Institute's fleet vehicles by 25% by the end of 2010 compared to 2007 levels



The Institute's fleet vehicles (around 70 in total) have reduced in engine capacity (e.g. 6 cylinders down to 4 cylinder engines) and number (less pool cars per campus) over recent years. Fuel usage has also decreased and therefore there has been a reduction in greenhouse gas emissions from the fleet over the past few years. The total fuel consumption in 2007 was approx. 157,185L petrol and 12,233L diesel. This equates to total fleet GHG emissions of 394,554 kg CO₂e*. In 2010, there was 120,837L petrol, 10,492L of diesel and 3180L of LPG consumed by the Institute fleet. This equates to total fleet GHG emissions of 311,341 kgCO₂e, which is a 21% decrease in fleet emissions compared to the baseline in 2007. So although the target of a 25% decrease in fleet emissions was not reached it was very close to being achieved.

*The table below lists the amount of CO₂ emitted from the exhaust for each litre of a particular fuel.

CO₂ Tailpipe Emissions/Litre of Fuel Consumed

Fuel Type	CO ₂ Emissions
Petrol	2.3 kg
LPG	1.6 kg
Diesel	2.7 kg



Materials Use & Waste Management

Target	Status	Summary
Develop “Sustainable Purchasing Guidelines” by the end of 2009		There were no guidelines produced for the Institute to guide the purchasing of environmentally-preferred products. There were some actions in the energy and water savings strategies that specified the purchasing of 4-star energy star and WELS rated products as a minimum. Sustainable procurement is an important next step for the Institute’s sustainability program. Goods made from recycled products or certified by environmentally sound trademarks such as GECA & Fairtrade are some of the areas worth pursuing.
Purchase recycled-content paper for all copy paper from mid-2009		The purchase of recycled-content paper for copying and printing has been sporadic across the Institute over the past 3 years. Batches of recycled-content paper were purchased in between batches of virgin paper during 2008 and 2009. Since the Fuji-Xerox (FX) contract commenced in 2010 there have been some campuses solely purchasing recycled-content paper and others that have resorted back to virgin paper to minimise paper jams. Some campuses have found that recycled-content paper creates more paper jams but this has more to do with the poor storage of the paper from humidity. Further work is needed in this area to ensure that the NSW Government Sustainability Policy target of a minimum of 85% of all copy paper purchased by NSW Government in 2014 is to contain recycled content.
Reduce copy paper consumption by 25% by the end of 2010, compared to 2007 levels		Data on paper purchased has not been easy to gather across the Institute. The best estimate came from 2009 as part of the SCG reporting. Corporate Express figures were supplied then but there is likely to be a certain amount of paper purchased by sections that cannot be easily calculated. Despite this it is expected that the consumption of paper has decreased substantially since 2007 due to an increase in electronic data storage and default double-sided copying/printing on the FX MFDs.
Develop a Waste Reduction and Recycling Procedure by the end of 2009		A formal Waste Reduction & Recycling Procedure has not yet been prepared for the Institute. In early 2010, the NSW Government introduced a new contract for Integrated Waste Management that incorporated secure document destruction, paper, cardboard, commingle and waste services all under the one service provider. Since then the Institute has increased the number of commingle recycling bins at a number of campuses. However, recycling systems can be dramatically improved at all campuses and this needs to be a focus from 2011.



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<p>Reduce general waste annually going to landfill by 15% volume by the end of 2010, compared to 2007 levels</p>		<p>Although no detailed data is available across the Institute on the volumes of waste being disposed to landfill annually, it is unlikely to have changed much over the 3 years. This is because the number of waste skips and collection frequencies has not been significantly altered since 2007. From 2010, Thiess Services has been supplying detailed data on waste volumes collected from the campuses in the Northern district. This data suggests that some bin collections could be reduced as the volume of waste in the skips is sometimes very minimal.</p>
<p>Recycle all waste paper, cardboard, toner cartridges, mobile phones, oil and scrap metal</p>		<p>The Institute has been very successful at recycling paper, cardboard, toner cartridges, mobile phones, oil and scrap metal. Virtually all the campuses have recycling systems in place for all these products. Most of these items cost little, if anything, to recycle as they are valuable commodities to industry for reuse into new products.</p> <p>Under the “Cartridges 4 Planet Ark” collection program, 2092 cartridges had been collected across the Institute between 2007 and mid-2009. Since 2010, Fuji Xerox has implemented a toner cartridge recycling system for their MFDs and copiers across the Institute. Used cartridges are collected and sent back to FX where they are either remanufactured or recycled.</p>
<p>Select and use materials, processes, equipment and services at all times that are environmentally-preferred and prevent pollution</p>		<p>This target can only be successfully reached if all staff have an understanding of the importance of environmental sustainability. There has been a substantial amount of staff training and awareness in environmentally sustainable work practices over the past 3 years, so it is hoped that there has been some progress made in this area. In 2009, an Institute-wide staff survey identified that 80% of respondents have personally made changes to their work practices to reduce their use of energy. This indicates staff contributing to the achievement of our environmental initiatives.</p>

Air & Noise

Target	Status	Summary
<p>Receive no complaints or infringement notices for air and noise pollution from any campuses</p>		<p>The Institute has not received any complaints or notices for air or noise pollution over the past 3 years. The Moss Vale campus has previously had issues with its wood-fired kiln emitting soot and smoke across neighbouring backyards. Now the campus notifies the neighbours in advance when the kiln is being fired and they have not had any problems since 2007.</p>



Land & Biodiversity Management

Target	Status	Summary
Protect and enhance sensitive environmental sites on campus		The main sensitive environmental site across the Institute is the Endangered Ecological Community (EEC) at the Yallah campus. Other campuses such as Goulburn and Bega also have some notable vegetation communities within or adjacent to their campuses. Over the past 3 years, the Conservation & Land Management students under their TAFE teacher, David Brookfield, have been preparing a Natural Areas Plan of Management for the Yallah campus. Their PoM considers the protection and enhancement of the Illawarra Lowlands Grassy Woodland EEC. A number of maps have been produced which show the boundaries of the EEC. Access through the EEC has been diverted to help reduce plant trampling and revegetation has also taken place.
Control weeds, pests and feral animals in an environmentally-sound manner		Almost all of the Institute campuses have weeds, pests and feral animals (e.g. foxes, rats, rabbits) present. Control of weeds on campus is usually minimal due a lack of resources. The main campus where weed and pest control is regular is at Yallah. Students studying horticulture or CaLM get involved in bush regeneration work around the campus as part of their studies. Possums and snakes can also cause havoc on campus and are generally relocated alive by animal experts.

Sustainable Facilities & Buildings

Target	Status	Summary
Ensure all new buildings and major renovations achieve a minimum 4 Star Green Star Rating (signifies 'Best Practice') incorporating sustainability principles and energy and water savings measures		None of the new buildings or significant renovations that have taken place within the Institute over the past 3 years have been Green Star rated. Despite not having formal Green Star accreditation though, a number of new buildings have, however, had green building principles included. These include the mud brick Green Skills Training Centre at Yallah, the renovation of E Block and the new block at Queanbeyan campus. The newly renovated buildings included such things as ceiling insulation, automated lighting, energy efficient lighting and rainwater tanks. There is a new building being designed for the Yallah campus that will be 5-star Green Star rated and due for completion in mid-2012. This will be the Institute's first Green Star rated building and a showcase of new green building design.



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Findings

The TAFE NSW Illawarra Institute has worked solidly over the past 3 years to implement the majority of the targets and strategies in the EMP 2008-2010. The Institute has been among the leaders of the TAFE sector in implementing sustainability initiatives. TAFE Illawarra is one of only 4 of the 10 TAFE NSW Institutes to have a certified ISO 14001 EMS and only the second Institute to be awarded Silver recognition in the Sustainability Advantage (SA) partnership program. Of the 500 organisations in the SA program, only 11 have achieved Silver recognition or higher.

The implementation of many of the actions in this report has resulted in operational savings in energy, water and waste. Compared to the 2007 baseline year, there was a 10 and 17% reduction in electricity and water usage respectively in 2010. This alone has saved an estimated \$140,000 in 2010 just for these two utilities. The increase in recycling bins across the Institute for a range of materials such as paper, cardboard, commingle, metals, mobile phones and toner cartridges over the past 3 years was positive but probably only reduced waste to landfill by a small percentage. Improved data collection for environmental metrics, including waste and recycling, is one area that can be improved upon in the coming years and will help guide management of these areas.

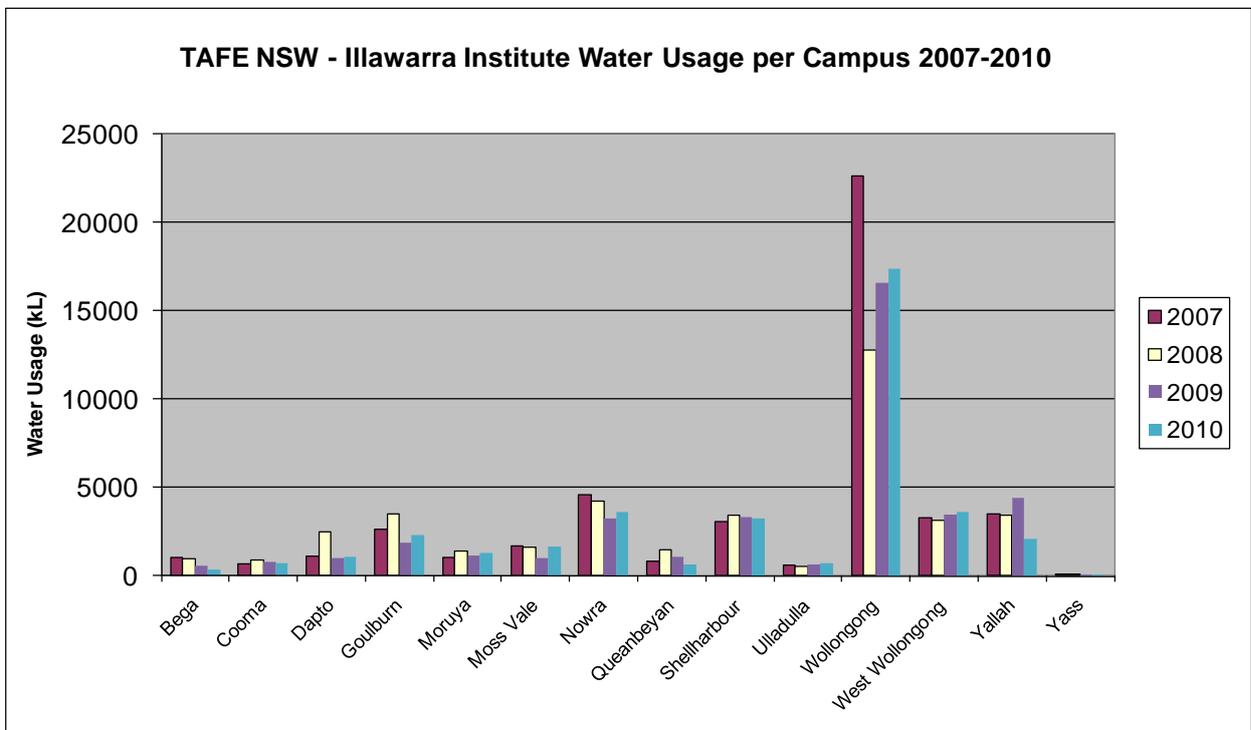
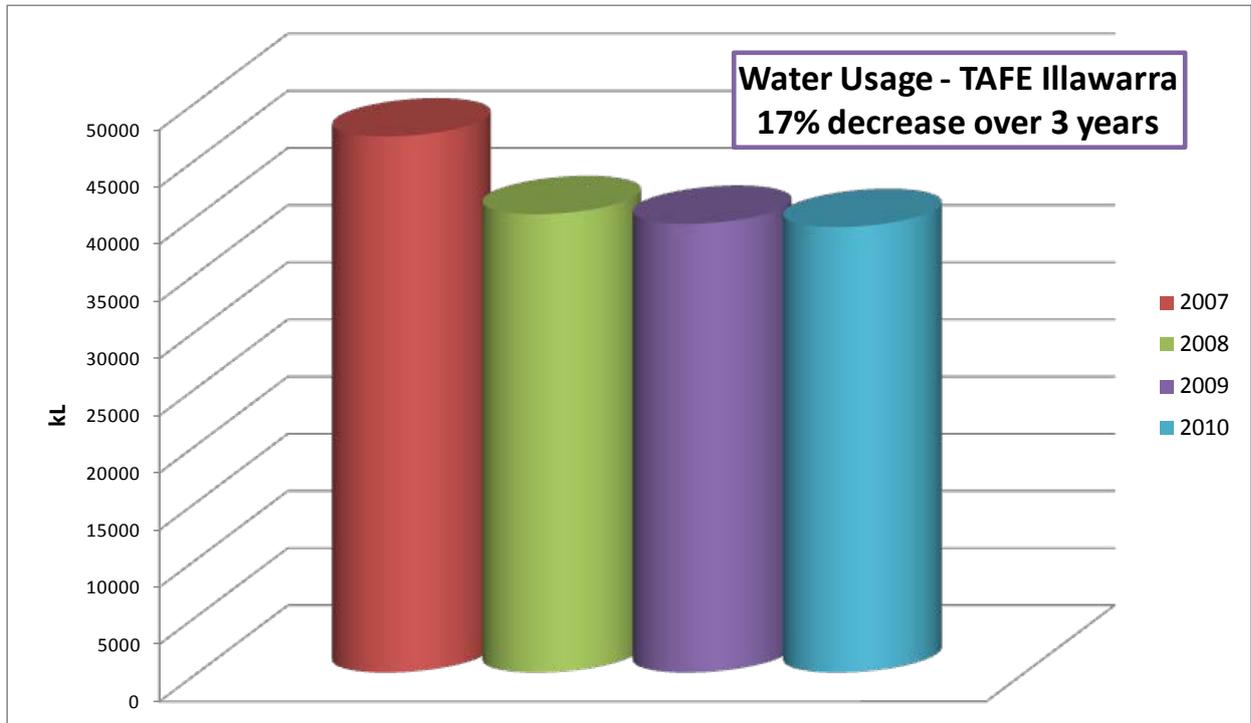
The Institute participated in the national Sustainable Campus Group reporting initiative in 2010. The results showed that TAFE Illawarra scored better than the national TAFE sector average for all the parameters reported against gross floor area. When compared against per capita figures (i.e. staff and student numbers) however, the Institute was slightly worse than the national TAFE average for facilities energy use, fleet emissions and waste to landfill. This is mainly due to our large number of operational campuses in regional areas which consume utilities for a relatively small number of students. The standardised measures of gross floor area and per capita are recommended for use in future environmental monitoring as they allow for comparisons between years and between campuses of different sizes and student populations.

Recommendations

1. The new 3-year Environmental Sustainability Plan 2011-2013 should be prepared to continue the environmental achievements of the Illawarra Institute into the next sustainability phase.
2. New environmental performance indicators be set as standardised parameters (i.e. units divided by no. of staff/students and/or gross floor area), rather than as absolute figures.
3. Waste avoidance and minimisation, recycling, energy efficiency, regular data collection, fleet emissions reduction and sustainable procurement should be priority areas in the new Plan.
4. The Institute apply for environmental awards and recognition to promote its implementation of a solid environmental program.
5. Staff and student training in education for sustainability should be a high priority for the Institute in the next 3 years.
6. A small annual budget of minor works should be considered for the implementation of the new ESP across the Institute.



Appendix 1 Water Usage across TAFE NSW – Illawarra Institute 2007-2010

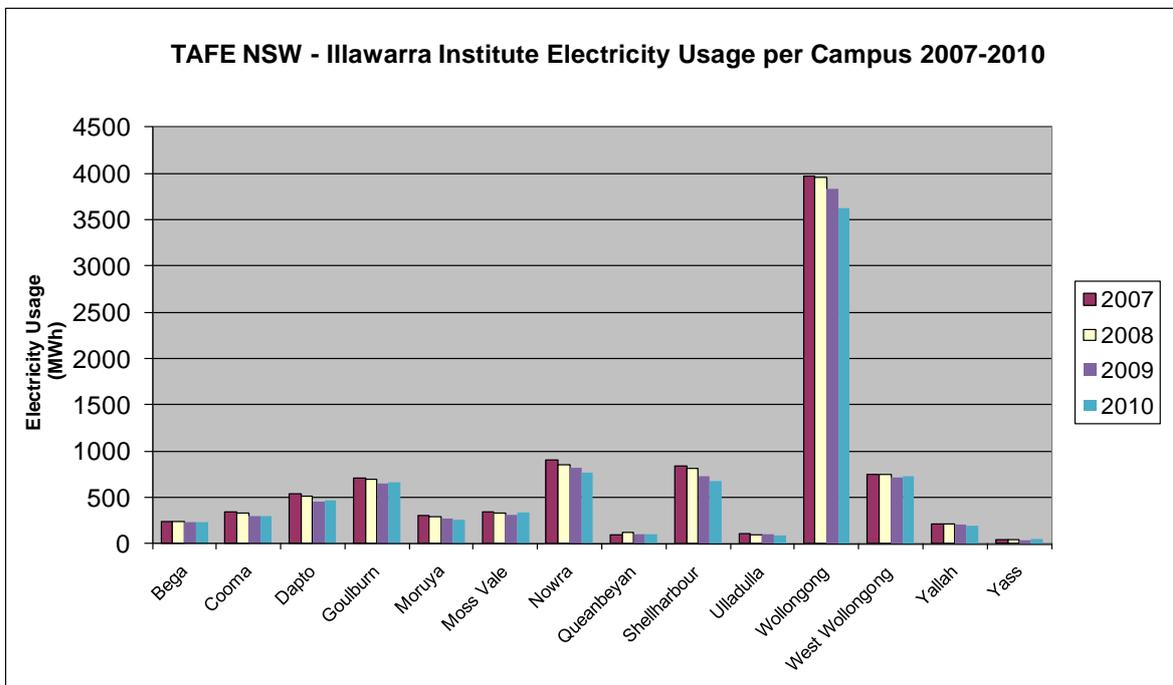
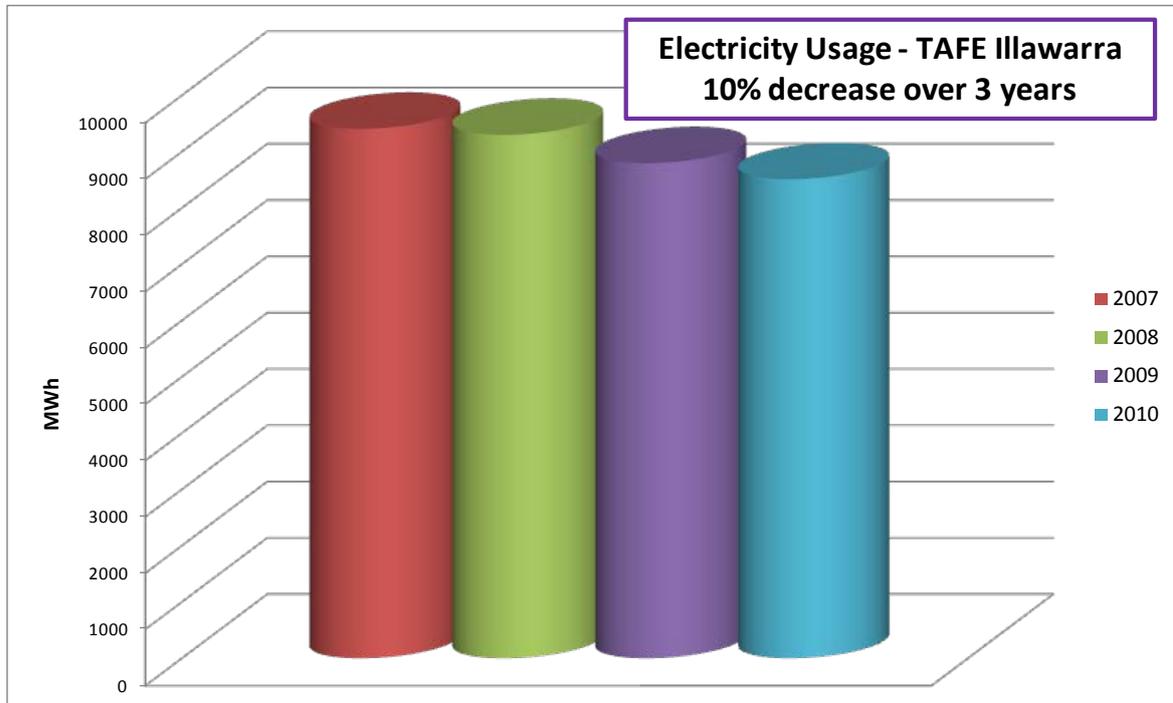


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Appendix 2

Electricity Usage across TAFE NSW – Illawarra Institute 2007-2010

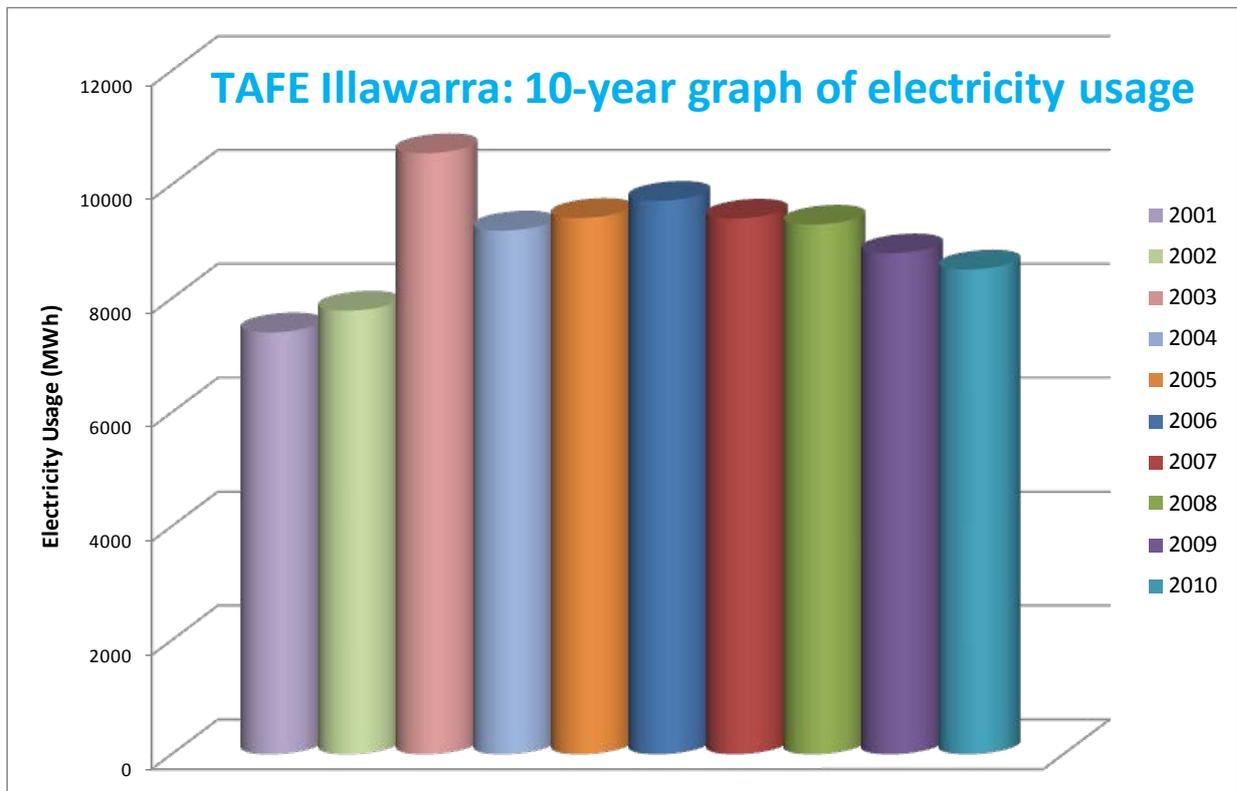


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Appendix 3

Electricity usage across TAFE NSW – Illawarra Institute over past 10 years



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