City of Kwinana

Final Report

Ventilation upgrades, air curtain, real time energy monitoring and energy efficiency education at the City of Kwinana's aquatic and youth centres.

Community Energy Efficiency Program Round 2

This activity received funding from the Australian Government

Australian Government
Department of Industry, Innovation and Science
1. Executive Summary

This project involved the installation of an air curtain, real time monitoring and energy efficiency signage at the City’s Recquatic Centre (Cnr of Chisham and Gilmore Avenues, Kwinana). The Recquatic Centre facilities include a 10 lane 25m pool, spa, leisure and hydrotherapy pools, gym, group fitness studio, 2 court basketball stadium, large meeting room, crèche, cafe and offices.

The primary objective of the real time monitoring system was to allow the Recquatic Centre staff to easily track energy and water consumption, target areas for energy and water efficiency upgrades and act quickly on excessive consumption. It should also allow staff to accurately track the benefits of particular energy and water efficiency initiatives.

A secondary objective is to allow visitors to the centre to view the energy use of the centre, prompting them to change their behaviour and reduce their use of energy and water while using the centre and at home. This display may also be used to complement education programs.

The City was intending to install this system following a full plant and mechanical refit at the Recquatic Centre which was scheduled to begin in May 2014 and be completed by the 28th of November 2014. The real time monitoring system was only able to be installed following this refit because the plant refit involved a reconfiguration of the electrical supply and wiring which included installing all new switchboards and electricity meters.

Unfortunately the plant refit was significantly delayed. This was mainly due to the discovery that tiles in the pool area had lifted and after negotiation with the contractor, it was discovered that all of the tiling needed to be replaced before work could continue.
Following the completion of the tiling the tiles needed to set before the pool could be filled and the pool plant commissioned (which included the finalisation of the new switchboards and meters). This delayed the refit by approximately 5 months. A significant time contingency was built in to the CEEP project plan for delays but this was exceeded. Unfortunately this has meant that the majority of the real time monitoring component of the CEEP project was not been completed by the Final Milestone deadline of 29th May 2015.

The initial setup of the real time monitoring webpage and monitoring system has been completed as has the addition of Western Power recorded interval data. The addition of the electricity sub-meter data was not able to be completed prior to the deadline but will be completed by the City.

This project also increased the energy efficiency of the City of Kwinana’s Recquatic Centre by installing an air curtain. The objective of this part of the project was to prevent heat and cool loss through the door as patrons enter and leave the building and therefore reduce the load on the centre’s air conditioning. This system was installed successfully and after refining its settings is now performing its original function. The projected energy cost savings are $5,812 per year.

The energy efficiency of the City’s Youth Centre was increased by the installation of ventilation fans. The objective of these fans was to vent hot air out of the basketball court and therefore reduce the load on the centre’s air conditioning system. The projected cost savings for the ventilation fans is $1,209 per year.

Communication and Education activities included;

- The youth centre visitors participated in a pop-up pedal powered movie as part of their celebration of Earth Hour.
- A successful Living Smart Sustainable Living Course was held for community members. Attendees received information on making their house and behaviour more energy efficient.
- A partial case study on these activities was placed on the Sustainability Officers Networking Group.
- Signage was installed at the Recquatic centre educating visitors about the project and energy efficiency more generally.

The project was promoted through a media release, facebook and the City’s newsletter. The nature of the media used meant that there was minimal feedback from the community. However in the case of the facebook posts comments received were positive.

The City will continue the installation of the real time monitoring as the funds for this part of the project have already been committed. The City intends to continue to run the Living Smart course annually (subject to internal funds being available).
The views expressed herein are not necessarily the views of the Commonwealth of Australia, and the Commonwealth does not accept responsibility for any information or advice contained herein.

2. Project Objectives

To increase the energy efficiency of the City of Kwinana’s Recquatic Centre and Zone Youth Space.

To educate the facility users and the general community about energy efficiency and encourage them to change their behaviours while using the facilities and at home.

These objectives contribute to the overall objectives of CEEP by reducing the City’s energy use and educating the community about opportunities to reduce energy use at home. The City of Kwinana is a low socio economic area and these activities will particularly benefit people in the community who are already struggling to pay their electricity bills.

3. Project Energy Efficiency Activities and Outcomes

The project was conducted at two facilities;

1. City’s Recquatic Centre (Cnr of Chisham and Gilmore Avenues, Kwinana). The Recquatic Centre facilities include a 10 lane 25m pool, spa, leisure and hydrotherapy pools, gym, group fitness studio, 2 court basketball stadium, large meeting room, crèche, cafe and offices.

2. The City’s Youth Centre, The Zone (Cnr Gilmore Avenue and Darius Drive, Kwinana) This facility consists of offices, drop in youth space, indoor basketball court, meeting rooms, computer room and craft room.

These sites were chosen as they are both significant energy users and high profile well used facilities. The project included 5 main activities. A description of these activities and issues, learnings and problems are provided below.

Rooftop ventilation fans - Eleven 410mm Univent ventilators with internal booster fan blades were installed along the ridge of the youth centre roof in order to allow hot air to vent out of the basketball court area and reduce loads on the air conditioning system. The installation of the ventilation fans was straightforward and encountered no major difficulties.

A learning from this project was that these fans may not be suited to all applications as they vent the warm air in winter when it is needed inside. In areas where warm air is required to be retained a self closing fan with a thermostat would be a better choice, however this was not an issue in this case because playing sport in a cool environment is not going to make
the users uncomfortable. This may be different in the case of an office environment where warm conditions in winter are needed to keep occupants comfortable.

**Air curtain** - An air curtain was installed at the entrance to the City’s Aquatic and Recreation Centre in order to reduce heat and cool loss from the centre when the doors open and therefore reduce the load on the centre’s air conditioning system. A problem was encountered in the installation of the air curtain as it was found that there was no supporting structure behind the door that was capable of holding the curtain. An additional structure was required to be installed to support it. This problem could not have been discovered until construction had commenced. Fortunately contingency was allowed to cover this eventuality and the costs were within budget.

**Real Time Monitoring** - Real time monitoring was planned to be installed at the City’s Aquatic and Recreation Centre. The primary objective of the system was to allow the Recquatic Centre staff to easily track energy and water consumption, target areas for energy and water efficiency upgrades and act quickly on excessive consumption. It would also allow staff to accurately track the benefits of particular energy efficiency initiatives.

This part of the project could only be installed once a full plant refit was completed at the pool. This was a separate large, complex project which was due to be completed by November 2014. The real time monitoring was dependent on this refit because the refit involved moving and upgrading a number of the switchboards and the data loggers needed for the real time monitoring needed to be plugged in to the switchboards.

Unfortunately the plant refit was significantly delayed. This was mainly due to the discovery that tiles in the pool area had lifted and after negotiation with the contractor, it was discovered that all of the tiling needed to be replaced before work could continue. Following the completion of the tiling the tiles needed to set before the pool could be filled and the pool plant commissioned. This included the installation of all new switchboards and electricity meters. This delayed the refit by approximately 5 months. A significant time contingency was built in to the CEEP project plan for delays but this was exceeded. Unfortunately this has meant that the real time monitoring component of the CEEP project was not been completed by the Milestone deadline of 29th May 2015.

Significant work has however been undertaken towards this part of the project up until the 17th of September 2015. A contractor was engaged and the funds committed to the installation of the system in August 2015. The web platform has been constructed and the overall energy use (taken from Western Power) has been incorporated into this website. As of the 10th of November 2015 the City were awaiting the installation of the equipment that would allow the electricity sub meters to be read and transmitted to the main website.
A learning from this aspect of the project was to not make any part of the project contingent on a separate project being completed, especially where that project is complex in nature.

**Energy efficiency workshop** – The Energy Efficiency workshop took the form of two 2 hour sessions out of 8 sessions in a “Living Smart” Sustainable Living course. These workshops covered simple living and energy conservation. It covered the major ways that energy can be saved in the home by living more simply and implementing energy efficient technology and behaviours. It also asked participants to commit to some simple actions they would undertake at home. This workshop was very successful with over 20 people registering to attend the workshop. There were no major problems experienced with running this workshop. Feedback was received from the participants indicating that the workshop was very useful and in some cases a life changing experience leading to lasting behavior changes. The demand for another Living Smart course from the community has been sufficient that Council is intending to run a course annually (pending approval of funds). This is an example of the positive impact this funding has had in the community. Some social media feedback is provided in Appendix A.

**Youth Earth Hour event** – a pop up pedal powered movie was held as an Earth Hour event at the City’s youth centre on the 27th of March 2015. This entailed hiring a number of specially modified bikes which allowed riders to generate electricity which then ran the projection equipment for the movie. This activity was chosen based on the advice of the City’s youth engagement officer, who felt it would be a novel and appealing way to engage youth in an activity about energy efficiency and encourage them to participate in Earth Hour. The movie was run during the City’s normal youth drop in hours and was attended by 15 local youth. Based on attendance at similar events this was a successful result.

One problem encountered with this event was that although planning for the event began in January, fitting in with the Youth Advisory Council meeting cycles meant that the organisation was a bit rushed. Promotional material and media for this event is included in Appendix A.

### 3. Outcomes and Benefits of the Project

This project aimed to contribute to CEEP’s objectives by reducing energy use and energy costs for the City. The community education activities were anticipated to also reduce the energy costs of residents, many of whom fit a low socio economic demographic. Due to the delays in undertaking the project, anticipated energy savings have not been met yet. However the community education activities have already assisted residents, many of whom fit a low socio economic demographic to reduce energy use.

Actual energy efficiency improvements, cost savings and payback period results for the air curtains, ventilation fans and the real time monitoring equipment were to be calculated as part of a second energy audit following the completion of the project activities as per the
requirements of the CEEP program. This has not been completed due to the delay in completing the real time monitoring. The real time monitoring itself was also going to be used to calculate energy efficiency improvements.

The projected costs and energy savings were estimated as part of the initial energy audit and are provided below.

Given the ventilation fans and air curtain have been installed it is expected that these energy savings will be achieved. The City is continuing with the installation of the real time monitoring component of the project and therefore it is also likely that the projected savings for this part of the project will also eventually be achieved.

Summary of projected real-time monitoring savings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Quantity</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of monitored points</td>
<td></td>
<td>5 points</td>
<td></td>
</tr>
<tr>
<td>Electricity Saving</td>
<td>kWh/yr</td>
<td>23,915</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJ/yr</td>
<td>86,092</td>
<td></td>
</tr>
<tr>
<td>Natural Gas Saving</td>
<td>kWh/yr</td>
<td>12,358</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJ/yr</td>
<td>44,490</td>
<td></td>
</tr>
<tr>
<td>Total Saving</td>
<td>kWh/yr</td>
<td>36,273</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJ/yr</td>
<td>130,583</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Annual CO₂ Reduction</td>
<td>tCO₂/yr</td>
<td>24.5</td>
<td>0.93 kg CO₂/kWhₑ, 0.18 kg CO₂/kWhₑNG</td>
</tr>
<tr>
<td>Financial Saving</td>
<td>$/yr</td>
<td>4,907</td>
<td>0.165 $/kWhₑ, 0.0216 $/MJₑNG</td>
</tr>
<tr>
<td>Investment Cost</td>
<td>$</td>
<td>20,800</td>
<td></td>
</tr>
<tr>
<td>Simple Payback</td>
<td>Yrs</td>
<td>4.2</td>
<td></td>
</tr>
</tbody>
</table>

Summary of projected air curtain savings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Quantity</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Saving</td>
<td>kWh/yr</td>
<td>7,327</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJ/yr</td>
<td>26,377</td>
<td></td>
</tr>
</tbody>
</table>
### Summary of projected ventilation fan savings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Quantity</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVAC Load Reduction</td>
<td>kWh/yr</td>
<td>81,862</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJ/yr</td>
<td>294,703</td>
<td></td>
</tr>
<tr>
<td>HVAC Energy Saving</td>
<td>kWh/yr</td>
<td>28,228</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJ/yr</td>
<td>101,837</td>
<td></td>
</tr>
<tr>
<td>Proposed Fans Energy Consumption</td>
<td>kWh/yr</td>
<td>9,600</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJ/yr</td>
<td>34,560</td>
<td></td>
</tr>
<tr>
<td>Energy Saving</td>
<td>kWh/yr</td>
<td>18,628</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MJ/yr</td>
<td>67,061</td>
<td></td>
</tr>
<tr>
<td>Total Ventilation Capacity</td>
<td>M³/hr</td>
<td>6,000</td>
<td></td>
</tr>
<tr>
<td>Total Investment Cost</td>
<td>$</td>
<td>13,000</td>
<td></td>
</tr>
<tr>
<td>Financial Saving</td>
<td>$/yr</td>
<td>5,812</td>
<td>0.312 $/kWh</td>
</tr>
<tr>
<td>Simple Payback</td>
<td>Yrs</td>
<td>2.4</td>
<td></td>
</tr>
</tbody>
</table>

Source: City of Kwinana Energy Efficiency Analysis Recquatic and Youth Centres Enigin February 2013

The ancillary benefits of the activities have included better thermal comfort in the Youth Centre basketball court and better relationships between the Council and the community.

### 4. Project Demonstration and Communications Activities and Outcomes

The project Demonstration and Communications Activities undertaken as part of the project are listed in the table below. The overall target audience is the Kwinana community. In 2014 the population of Kwinana was approximately 36,000.
| Demonstration and Communication Activity                                                                 | Target Audience                  | Outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
| Website and Facebook Article at commencement and completion of project                                  | Kwinana community                | A media release was prepared (which is generally published on the City’s website) but in this case was forwarded directly to the media outlets. A facebook post was posted promoting the Living Smart program which kicked off the project. The City’s facebook page has over 9000 followers. As the project has not yet been completed completion articles and facebook posts have not been completed.                                                                                                  |
| City of Kwinana newsletter (Spirit of Kwinana)                                                         | Kwinana community                | A project commencement article was published in the Spring 2013 edition of the Spirit of Kwinana. The Spirit of Kwinana is delivered to all 30,000 residents of the City.                                                                                                                                                                                                                                                                                       |
| Local Paper Media Release                                                                               | Kwinana community                | A media release and photo opportunity was conducted on the 6th August 2013 with Mayor Carol Adams and the Hon Gary Gray. A media representative attended however the story was not published by the paper.                                                                                                                                                                                                                                                                       |
| Youth event to coincide with Earth Hour 2015 (see http://www.earthhour.org/ for further information)    | Zone users                       | A pop up pedal powered movie was held as part of Earth Hour 2015 on the 27th March 2015 as a way of raising awareness of energy efficiency amongst youth. 15 youth attended this event.                                                                                                                                                                                                                                                                                                                                 |
| Youth event to coincide with Earth Hour                                                               | Zone users                       | The Youth Advisory Council ran an online facebook pledge for Earth Hour challenging 200 people to commit to participating in Earth Hour. If successful the Youth Advisory Council would hold a tree planting day. People committed by “liking” the post. This was held in the weeks leading up to Earth Hour. 80 people “liked” this event. While the pledge was not successful there were 80 people who committed to participating in Earth Hour.                                                                                                                                 |
| Sponsor a Living Smart Community Education workshop for the Kwinana Community with a focus on energy efficiency. (See http://livingsmart.org.au/ for more information) | Kwinana community                | The Living Smart workshop was held over seven weeks from May – June 2014. 20 people attended this workshop. Given previous attendance at similar events this was considered successful. An evaluation of the workshop was conducted. In summary feedback from the group was very positive. The evaluation form asked about changes people had made following the course and it was found that the group would change their behavior in a range of ways including reading their electricity meter. |
every week, turning off appliances at the wall, having TV free days, putting slippers and a jumper on instead of starting their heater etc. Many participants are now involved in a local environmental community group in the area. The City is intending to run a Living Smart workshop every year (pending approval of funds).

<table>
<thead>
<tr>
<th>Install signage in the facilities to demonstrate the energy efficient features.</th>
<th>Recquatic Centre and Zone users and staff</th>
<th>Two pull up banners were printed and placed in the Recquatic Centre to inform the community about the energy efficient features. These banners are visible to 240,000 attendances per year.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public display of energy use information taken from the real time monitoring system.</td>
<td>Recquatic Centre users and staff</td>
<td>A publicly visible display of energy consumption information was planned to be installed as part of the real time monitoring. Unfortunately this has not been completed due to delays with the installation of the real time monitoring.</td>
</tr>
<tr>
<td>Reminder notices and stickers to encourage people to switch off appliances when not in use.</td>
<td>Recquatic Centre and Zone users and staff</td>
<td>Posters with energy efficiency tips were created to be posted on the back of 9 toilet doors in the Recquatic Centre. Promotional stickers were also created to be handed out to the community at the Recquatic Centre. These stickers were also handed out at the latest Recquatic Open day.</td>
</tr>
<tr>
<td>Case study posted on the local “Sustainability Officers Networking Group” website and submitted to WALGA Environment newsletter.</td>
<td>Other local governments</td>
<td>The case study was to be completed following the completion of the project. A partial case study was written and posted on the Sustainability Officers Networking Group. See Appendix B. This group has 157 members.</td>
</tr>
</tbody>
</table>

The project as a whole has provided benefits for low socio economic groups. The City of Kwinana is a low socio-economic area and the communication activities provide information to assist residents reduce their energy costs. This is particularly important in areas where people are already having difficulty in paying their electricity bills.

5. Budget
Below is a summary of the project budget and expenditure.

<table>
<thead>
<tr>
<th>Item</th>
<th>Budget</th>
<th>Actual spend plus committed to 17th September</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Time Monitoring</td>
<td>$29,957</td>
<td>$14,118.80</td>
</tr>
<tr>
<td>Rooftop Ventilation Ducts</td>
<td>$7,131</td>
<td>$4,920</td>
</tr>
<tr>
<td></td>
<td>Actual Cost</td>
<td>Budgeted Cost</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Air Curtains – Recquatic</td>
<td>$14,310</td>
<td>$12,538.32</td>
</tr>
<tr>
<td>Centre Doors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Youth Education Activities</td>
<td>$1,500</td>
<td>$1,000</td>
</tr>
<tr>
<td>Energy Efficient Workshops</td>
<td>$1,351</td>
<td>$1,152.32</td>
</tr>
<tr>
<td>Signage and Reminder Stickers</td>
<td>$3,000</td>
<td>$1058.51</td>
</tr>
<tr>
<td>Pre-Project Energy Audit</td>
<td>$3,850</td>
<td>$3,850</td>
</tr>
<tr>
<td>Post-Project Energy Audit</td>
<td>$3,000</td>
<td>-</td>
</tr>
<tr>
<td>Administration</td>
<td>$6,924</td>
<td>$4,099.60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$71,023</strong></td>
<td><strong>$42,737.55</strong></td>
</tr>
</tbody>
</table>

The project came in under budget for the real time monitoring because in the time between the original funding application being submitted and the final quote the contractor was able to find cheaper and more reliable monitoring equipment.

There was some unexpected expenses for the air curtain as once installation had begun it was discovered that there was not sufficient power supply or structural support for it. Fortunately sufficient contingency had been allowed to rectify this and the air curtain was still within budget.

The project was also under budget for the ventilation fans as the quotes received were cheaper than the original estimate made by the energy audit consultant. The signage and reminder stickers were also cheaper than expected.

6. Project Operation Mechanisms and Processes
The project was managed by the Sustainability Officer.

There were sufficient resources internally for the project to be successfully implemented.

There were no additional external resources which would have assisted with undertaking the project.

The major difficulty in managing the project was the delay in the completion of the pool plant refit at the Recquatic Centre.

The major learning from this project was that it would be prudent to avoid any projects that are dependent on other complex projects being completed, particularly construction and engineering projects, due to the high possibility of delays being experienced.

7. Conclusion
In summary the project involved the installation of ventilation fans at the City’s youth centre and the installation of real time monitoring and air curtains at the City’s Recquatic Centre. It also involved a variety of communication and education activities.
The ventilation fans, air curtain, communication and education activities were completed successfully. The real time monitoring was unable to be completed prior to the final milestone date. The activities that were completed have been valuable to the City. The ventilation fans and air curtain will assist the City to reduce its own energy consumption and the education activities have supported the community to reduce their energy use as well.

8. Declaration

**DECLARATION**

The Authorised Officer of the organisation makes the following declarations:

- I declare that I am authorised to submit this Final Report (including any attachments) on behalf of __________________________. (Name of organisation)
- I declare that the information provided in this Final Report is true and accurate.
- I understand, and acknowledge that giving false or misleading information in this Final Report is an offence under the Criminal Code Act 1995.
- I understand that final payment will only be made in accordance with the Funding Agreement including on satisfactory completion of Milestones.

Authorised Officer Signature: __________________________ Date: 11/11/2015

Name: __________________________

Position: __________________________

Organisation: __________________________

Witness Signature: __________________________ Date: 11/11/2015

Name: __________________________

Position: __________________________

Organisation: __________________________

The use and disclosure of information provided in this Final Report is regulated by the relevant provisions and penalties of the Public Service Act 1999, the Privacy Act 1988, the Freedom of Information Act 1982, the Crimes Act 1914 and the general laws of the Commonwealth of Australia.

Information contained in the Final Report may be disclosed by the Department for purposes such as promoting the program and reporting on its operation and policy development. This information may also be used in answering questions in Parliament and its committees. In addition, the selected project information will be made publicly available. Public announcements may include the name of the grant recipient and of any project partners; title and description of the project and its outcomes; and amount of funding awarded.
Appendix A Examples of Media and Social Media Responses to Activities

Source: Pop up pedal powered movie poster
Are you interested in reducing your energy and water bills?  
Want to grow your own food and live a healthier lifestyle?  
Want to meet more people in your neighbourhood?

Enrol in a Living Smart course for all this and more!

Delivered by Shani Graham and Tim Darby of Ecoburbia the course will cover:
- Simple Living
- Water Conservation
- Energy Conservation
- Waste Reduction
- Gardening for Biodiversity
- Gardening for Food Propulsion
- Sustainable Transport
- Healthy You
- Healthy Home
- Building Community

Where  
Ken Jackman Hall, Darius Wells Library & Resource Centre, Gir Robbo Way and Chisham Avenue, Kulin

When  
7 week course Thursdays  
15 May to 26 June 10:30am to 12:30pm

Cost  
$40 (May vary due to insurance, please advise if you want to do this when booking)

Creche available – please advise the number of children when booking.

For further information and to book please contact Shani at ecoburbia@gmail.com or 0417 941 991.

Source: Poster for Living Smart Course
Grant helps Kwinana Recquatic go green

The City of Kwinana recently received a grant for $40,168 from the Australian Government as part of the Community Energy Efficiency Program (CEEP).

The City will use the funding to install air curtains and a sophisticated energy monitoring system at the Recquatic Centre. Ventilation fans will also be installed in the Zone Youth Space basketball court to reduce the use of the air conditioning and improve the comfort of users.

It is estimated that the projects will save the City $11,928 in electricity and gas costs every year and even more as energy prices increase. These savings will be directed back to further energy efficiency projects through the City’s RevOlMing Energy Fund.

CEEP is providing $112 million in grants to 170 local governments and not-for-profit community groups for energy efficiency upgrades such as lighting, heating, ventilation and air conditioning. These grants will improve the energy efficiency and amenity of council and community use facilities, including museums, aquatic and leisure centres, community clubs and town halls.

Source: Spirit of Kwinana Spring 2013
The Kwinana Youth Advisory Council will host a tree planting day if...

200 people pledge to take part in Earth Hour 2015

Source: City of Kwinana Facebook Page
Living Smart - sometimes it is all worth it . . .

Running a Living Smart course is hard work. As I prepare for our 29th course at Piney Lakes part of me is not looking forward to lugging boxes, preparing talks and late nights.

But I just had the best unsolicited email from Allison and now I am excited again. Allison went along to our Kwinana course last year (and held off having her second baby until the course was finished). She and her hubby changed their mind about building a new house, choosing instead to by a 3X1 with a big garden, and after she moved in she held a street party so she knows half her neighbours.

Allison has given up plastic bags and bottles, reduced the number of chemicals in her home, and is now looking into how to make her new home more energy efficient. The veggie patch is next.

I though she put it brilliantly "There are lots of things I haven't done but its a process, it takes time to change your habits, but its better than doing nothing. I would encourage anyone to do the course, it will open your eyes and change your life"

Convinced? Join us at Piney Lakes (see Ecoburbia events) or try North Freo, Canning, Midland or Exmouth - details on the Living Smart website.

Allison's the one with the big belly down the front!
Appendix B Sustainability Officers Group Online Case Study

Ventilation upgrades, air curtain and energy efficiency education at the City of Kwinana's aquatic and youth centres.

Address
Kwinana Recquatic and the Zone Youth Centre Corner of Robbos way and Skerne St, Kwinana

Description of Project
The City was successful in gaining funding from the Community Energy Efficiency Program Round Two. The following case study outlines the activities conducted under this funding and discusses the learnings gained from the project implementation.

The project included 4 main activities.

Rooftop ventilation fans - Eleven 410mm Univent ventilators with internal booster fan blades were installed along the ridge of the youth centre roof in order to allow hot air to vent out of the basketball court area and reduce loads on the air conditioning system. The installation of the ventilation fans was straightforward and encountered no major difficulties. A learning from this project was that these fans may not be suited to all applications as they vent the warm air in winter when it is needed inside, In areas where warm air is required to be retained a self closing van with a thermostat would be a better choice, however this was not an issue in this case as cool conditions in winter in a basketball court are appropriate for its use.

Air curtain - An air curtain was installed at the entrance to the City’s Aquatic Centre in order to reduce heat and cool loss from the centre when the doors open and therefore reduce the load on the centre’s air conditioning system. A problem was encountered in the installation of the air curtain as it was found that there was not a supporting structure behind the door that was capable of holding the curtain. An additional structure was required to be installed to support it. This problem could not have been discovered until construction had commenced. Fortunately contingency was allowed to cover this eventuality.

Energy efficiency workshop - An energy efficiency workshop was held as part of a “Living Smart” Sustainable Living Course. This workshop was very successful with over 20 people registering to attend the course. There were no major problems experienced with running this course. A lot of feedback was received from the community indicating that there is significant demand for this type of workshop.

Youth Earth Hour event – a pop up pedal powered movie was held as an Earth Hour event at the City’s youth centre. The movie was attended by 15 local youth and attracted 2 media articles. One problem encountered with this event was that although planning for the event began in January, fitting in with the Youth Advisory Council meeting cycles meant that the organisation was a bit rushed. Future events with the Youth Advisory Council will commence organisation a month to two months earlier.
This activity received funding from the Australian Government. The views expressed herein are not necessarily the views of the Commonwealth of Australia, and the Commonwealth does not accept responsibility for any information or advice contained herein.

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Type of Project
mitigation
communication