Submission to Productivity Commission Australia's Urban Water Sector

Our submission will address a number of items contained in the overview of the Draft Report under the section:

An Urban water sector under stress

- *Use of mandated measures and/or subsidies to reduce the consumption of potable water from bulk sources of supply (including rainwater tanks. Low flow shower heads and water recycling schemes for non-potable uses)*

Our submission will address an area not covered specifically in the draft report. However the technology that we will outline will show that with the use of this technology the following benefits will flow to the Urban Water Sector.

- Saving water which is currently wasted at the end user premises
- Saving of greenhouse gases
- Economic benefit to customers of water supply authorities
- Economic benefit to Government /Semi-Government and Local Government

The above we believe will address the points laid out in

Section 1.2 of the Draft Report (page 3)

- *What has the Commission been asked to do?*

  ..provide options to achieve the identified efficiency gains,

  - *Economic, social and environmental impacts*
  - *Impacts on Australian governments, business and consumers*

Section 1.3 of the Draft Report (page 4)

- *Scope of the inquiry*
  - *Water conservation and water efficiency*

Outline of H2O Patented Technology TWS™ Town Water Saver

The technology addresses the problem of unwanted water egress into dwelling and commercial buildings. Currently all water authority's guarantees water flow to any premises when the delivery pipe is open. For the reasons listed below water may continue to flow into the building causing loss of water and damage to the framework of the building:

- Damage to hoses of dishwashers/washing machines
- Broken/leaking hot water systems
- Frozen pipes
- Leaking toilets
- Damaged tap or tap left on
- Faulty home irrigation systems
- Mechanical damage of underground pipes

When a TWS™ is fitted to a water supply the system will shut off the water flow after a period of time. Testing carried out over the past 3 years has shown that a time of 20 minutes will give the home/dwelling a margin to complete water requirements of the household.

This new technology is the only type of its kind in Australia and overseas.

It is our position that the productivity in the Urban Water Sector must include measures to stop the waste of water from the end user premises. Worldwide this loss has not been addressed mainly because there has not been the technology to stop these losses. Australia can show the world that this Australian developed technology will stop loss of water from the urban water supply system. Stopping this loss will mean that the amount of water held in storage may mean that current dams may be able to provide water for the community and delay building of more dams and reduce new infrastructure demands

During this time other education programs may encourage users of water to change water use or allow the grey water programs to provide water for non-potable use.

How H2O Organisers Technology fits within the Productivity Terms of Reference

In the draft report section 8.2 Water use efficiency and conservation measures a number of matters are under consideration. In view of this we offer for your consideration a number of examples of how H2O Organisers technology will create benefits.

Water Loss from Schools within Sydney Water Area

Published on Sydney Water web site (see attachment 1) it is stated that those schools within its area use 7,790 million litres of potable water per year or 7,790,000 Kilolitres of water per year. This amount is 6% of all non-residential water use within Sydney water area.

Both Sydney Water & Hunter Water have confirmed that approximately 40% of this water is used when the schools are closed. This amount of water is 3,116,000 Kilolitres of water that is effectively wasted or not used by the student population.

Why is this so?

Our research shows that some of the reason for this loss:

- Leaking Toilet cisterns (1 leaking toilet wastes over 26.000L per year)
- Damage to delivery system within the school area such as mechanical damage
- Leaking Irrigation Systems
- Leaking taps (1 leaking tap wastes over 5,000L per year)
- Vandalism

Attachment 1 provides a power point overview of the technology.

Sydney Water-Every Drop Counts in Schools program

The program has developed an education program that works while the school is operating however schools are shut for long periods of the year. Attachment 2

The EDC in Schools Program has produced a saving of 32,471 Kilolitres of water with a dollar saving of $175,000 plus a saving of 35 tonnes of greenhouse gases.

Benefits of using H2O TWS™ (Town Water Saver)

7,790,000kL used with 40% used when school closed = 3,116,000kL wasted

Assuming that schools have the TWS system fitted and based on the current saving figures from the EDC in Schools Program the water saving could be as below:

EDC saving 32,471kL Dollar saving of $175,000 35 Tonnes of Greenhouse Gas

Amount of water used when schools closed 3,116,000kL

% Saving	Kilolitres Saved	Dollar Saving	Greenhouse Gas Saved
10	311.600	$1,750,000	350
20	623,200	$3,500,000	700
40	1,246,400	$7,000,000	1,400

The above table showing saving needs to be balanced with the cost of fitting the TWS™ system to the schools which will have to be off-set by any cost to install the system.

Currently in the Sydney area there are 1488 public schools. If these schools had an uptake of 80% of TWS™ the cost for the installation would be:

1200 schools x cost of $ 5,000 = $ 6,000,000

This installation would take 3 years to install and based on the above costs the cost benefit to the NSW State Government in water cost alone out way the capital cost. No allowance has been made for the benefit of the saving of greenhouse gases.

While the saving of these greenhouse gases is not within the area of the Commission consideration of the amount of greenhouse gases must be considered.

See graphs 1, 2, 3, & 4

Water Saving for private Dwellings

When using the TWS™ system, unlike BASIX the current system in place in NSW, the amount of water saved cannot be measured. It is our assertion that this system will act as a disaster control mechanism, reducing the damage used by minimising the volume of water that will flow from a damaged delivery pipe system.

The fitting of a TWS™ to any urban water system could be likened to a smoke detector for the water system.

The insurance industry pays out an average of $5,500 per insurance claim for damage caused by egress from damaged water systems. While it is true that water egress within the first 20min will cause damage, continued flows of water will only add to the damage caused.

While the amount of all water lost is not recorded a quick understanding of the amount of water lost from a just running tap should give an understanding of the losses caused by water egress. Water flows at about 40-50L per minute from the Sydney water system.

Each hour that a tap is running water is lost at this rate 40L x 60minute = 2,400L per hour.

Therefore the longer a tap is running the larger the amount of water wasted. If the water is running for say 10 hours the amount of water wasted is 24,000L. It is little wonder that the average damage bill caused is in the order of $5,500 per claim. No allowance has been made for any cost of greenhouse gases.

Water Loss from Commercial Installations

While it is hard to quantify the loss in these area losses certainly do occur. In many cases these losses cause damage to other enterprises within the same building such as in the case of leaks on upper floors leaking throughout the building causing damage to many floors.

Leaks on council and private public amenities such as playing fields or sporting fields cause water loss for a number of reasons such as:

- Vandalism
- Leaking irrigation systems
- Leaking taps
- Leaking toilets

All of the above add to the cost of the operation of these important public amenities.

Benefits Australia Wide

Above is an the example of the water saving potential in the Sydney Water Area but these savings would be able to be made in other areas of Australia.

Melbourne is about the same size as Sydney and while, this is an assumption, if schools in the Sydney area can save:

- **$ 7,000,000**
- **1,246,400kL of water**
- **1,400 tonnes of Greenhouse Gas**

Then the same can be said of the saving in the potential saving in the Melbourne area. Water saving will be Australia wide however at this poi time the total benefits have not been calculated.

It can be seen that a great leap forward in water saving would be made Australia wide with the use of H2O's TWS™.

Use and adoption of the TWS™ in Australia will form the basis of water saving technology that can be used in any reticulated water system worldwide. This would position this technology as leading the world in controlling water loss in urban water supplies

Costing's

The installation cost for the standard TWS™ would be in the order of $500-$600.

When looking at the cost for the installation either as a retro fit or as part of new construction the benefit to the end user needs to be taken into account.

A quick review of the report findings about the Rainwater Tank example (section 6.4 pages 142) may assist in an understanding of the cost benefit for the installation of the TWS™ into the water supply system.

Rainwater tanks attract a subsidy by way of rebate from the Australian Government of between $400 & $500 according to the size of the tanked fitted. (Box 6.8 on page of Draft report) The cost to the household is far greater, much in the order of $1,500 per tank. A tank will provide the following benefits as set out in the draft report section 6.4 box 6.8:

- Lessen the need for investment in large-scale water supply augmentation
- Reduce water and stormwater infrastructure costs

It is our view that the take up of water tanks needs to be much greater in order to achieve the above benefits across the water supply system

Whereas when a TWS™, is fitted the need for a rebate based on the cost to fit the system either as a retro fit or as part of new construction, would on the face of it not be necessary. If however a small rebate was allowed, say of $150, the up-take would be beneficial to the end user and to the supply authority in the following ways:

- Stopping occurrence of excess water bills
- Stopping damage to property –average insurance claim $5,000
- A reduction of potable water into the sewage system therefore the reduction in volumes of water needing treatment.

Summary

While we understand that our submission to this enquiry is showing our new technology, in which we have a commercial interest, does fit within the guidelines of what the Commission wants to achieve.

Once again we draw your attention to

Section 1.3 of the Draft Report (page 4)

Scope of the inquiry

- *Water conservation and water efficiency*

It is our belief that this new patented technology developed and tested in Australia does provide proof that it will meet and exceed the following criteria

- Saving water which is currently wasted at the end user premises
- Saving of greenhouse gases
- Economic benefit to customers of water supply authorities
- Economic benefit to Government /Semi-Government and Local Government

Attachment 1

A New Way to Stop Water Damage & Lost Water for Town Water Systems

TWS™

h2o organiser

All Town Water Systems Leak

- Domestic water systems leak
- Commercial water systems leak
- Public utilities water systems leak

What's the problem?

- End user water systems leak world wide
- Why?
- Leaking Hot Water Systems
- Problems with Dishwashers/Washing Machines
- Leaking Toilets
- Taps Left On
- Frozen/Damaged Pipes

What's the Cost?

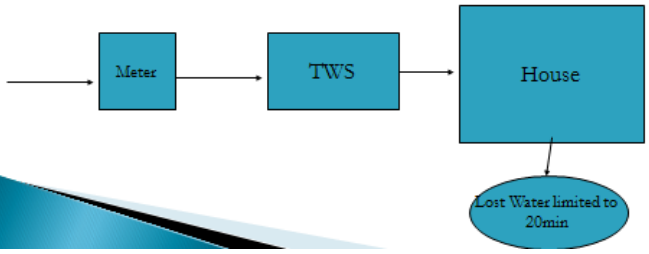
- Australia
- Water Egress insurance cost $5,500 plus
- One leaking toilet wastes over 26,000L/year
- Excess water user pays
- Northern Ireland Dec 10
- NI Housing damage could top £10m
- "Thousands of homes damaged as a result of flooding caused by burst pipes" BBC report 5th Jan 2011

What's the Fix?

- TWS™ fits to all reticulated water systems world wide
- Can be retro fitted
- Fitted to new construction

How it works?

- When the TWS™ is fitted if water flows more than 20min then the water is turned off by the TWS unit which is fitted after the water meter..



Where can it be Fitted?

- **Any House or Private Dwelling**
- **Home Units Apartments**
- **Commercial Buildings**
- **Sporting Fields & Amenity Blocks**

Can I make it Smart?

- TWS™ can Email you about the problem
- TWS™ can text you about the problem
- TWS™ can send a monthly report about any building problems

Who Fits It?

- Licensed Plumber should take about 1hr
- Licensed Electrical Trades Person about 1 hr

Contact H2O Organiser Limited

Robert Porter-Coote +61 422 824 847
Colin Johnson + 61 404 886 393
Mirek Sulkowski +61 411 340 255

Attachment 2

Every Drop Counts in Schools Program

What is the Every Drop Counts in Schools Program?

The Every Drop Counts (EDC) in Schools Program supports schools across Sydney, the Illawarra and the Blue Mountains by teaching them to value water and to develop water wise practices.

Schools in Sydney Water's area of operations use about 7,790 million litres of water a year, which is six per cent of all non-residential water use. The EDC in Schools Program helps these schools become water efficient.

How can your school benefit from the program?

1. Access our website for free curriculum linked resources which can help create water awareness and school water efficiency.

The resources include:

Get free educational resources from Sydney Water's website

- lesson plans
- student worksheets
- fact sheets such as reading water meters, monitoring water use, rainwater tank rebates or finding leaks
- templates such as water action plans, school water audits or stormwater audits
- games for children to learn about water efficiency.

There are also free resources for schools and community groups in Sydney Water's area of operations. They include:

- lesson booklets
- water audit DVDs
- flow measuring cups
- Sydney Water branded products like rulers, stickers, pencils and water bottles.

View the range of education resources (PDF - 1715KB) available or call 1800 724 650 for more information.

Find out more about water wise rebates and offers.

Contact Sydney Water for free educational resources

2. Sign up to the EDC in Schools Program

Each year, Sydney Water signs up 40 schools to the program. These schools are high water using schools and/or schools that have made water efficiency a priority.

This program involves:

The smart meter's online monitoring system tracks your school's water use.

- Sydney Water installing a smart water meter which is an online monitoring system to track school water use and find leaks
  Find out more about smart meter monitoring
  Play video (WMV - 5557KB)
- a dedicated education officer to support the program in your school and to provide advice on water auditing and developing a water efficiency action plan
- a one-day professional development training course for teachers
- advice on relevant funding and incentives
- regular reports on how much water the school has saved.

In one year, schools in the program reduced their total water use by 32,471 kilolitres. This is a saving of about $175,000 a year for schools and a saving of 35 tonnes of greenhouse gas emissions.

Find out more about the EDC in Schools Program:

- Download the fact sheet (PDF - 1484KB)
- Download questions and answers (PDF - 481KB) for schools that have already joined the program.

Play video (WMV - 6089KB)

There are currently 80 schools in the program. View case studies for some of these schools and find out how EDC in Schools has helped improve their water efficiency.

3. Accessing Every Drop Counts Online

All schools can access their water use information using Sydney Water's EDC Online service. Schools should contact Sydney Water to receive a user name and password. They can then login to EDC Online. This information can be used to create spreadsheets and graphs. An online tutorial explains how to use the service.

For schools signed up to the EDC in Schools Program, the database also tracks your involvement in the program such as training completed, workshops attended or participation in events or programs. You can also view your school's report cards, water efficiency action plans and memorandum of understanding .

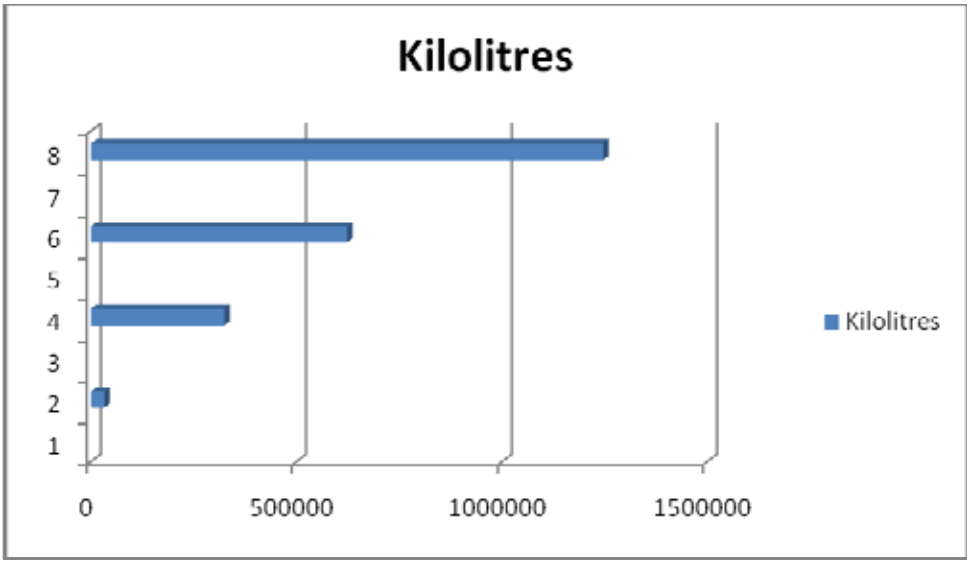
How to get involved with Every Drop Counts

Find out how to access EDC Online or join the EDC in Schools Program.

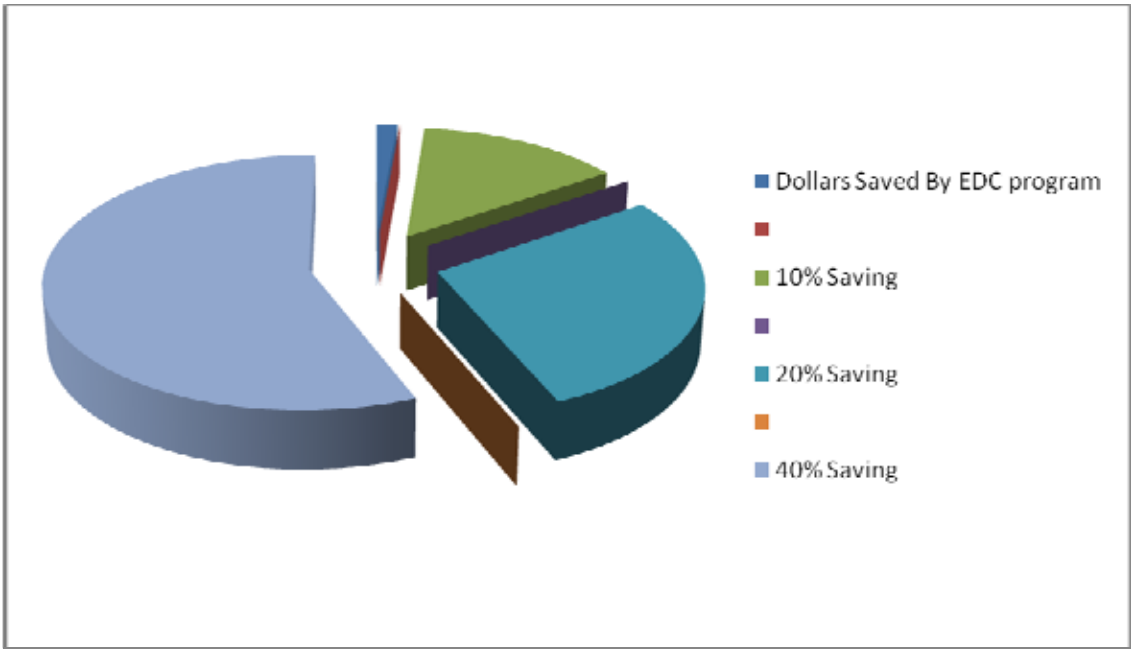
- contact Community Education at Sydney Water on 1800 724 650
- email education@sydneywater.com.au.

Learn about water: Definitions

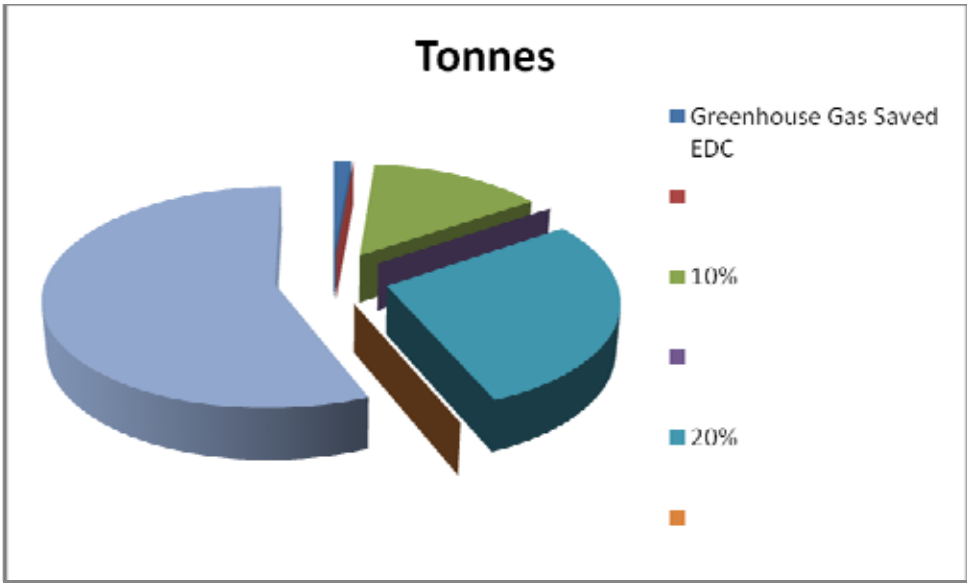
Graph 1



Graph 2



Graph 3



Graph 4