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Thursday, October 5, 2017,

Views and suggestions on the draft incentive scheme and innovation allowance to dm@aer.gov.au by 12 October 2017.

Dear Sir/Madam.

In response to the request for views and suggestions to reduce both peak demand and energy consumption, Enviroswim would like to put forward our suggestions based on our many years of experience and technological innovation in the swimming pool industry.

How can Enviroswim claim to be able to save so much power and running costs when compared to conventional chlorine and salt water chlorination?

Two basic facts that have a direct impact on how long a filtration and sanitizing system has to operate on a swimming pool are the EFFICACY and RESIDUAL of the sanitiser that is being used to disinfect the swimming pool water. Chlorine either added or produced via a salt water chlorinator for the pool disinfection has a poor efficacy and a very low/short residual. (please refer to [Tweed Lab efficacy testing of chlorine](#)). The low efficacy of chlorine in a swimming pool means that bugs and bacteria take a long time to be killed when they enter the pool giving them the opportunity to multiply many times before they are eventually killed by the chlorine. The slow kill rate of chlorine results in high volumes of chlorine being used or produced to accomplish the disinfection of the pool water. This low efficacy also results in long operating times of filtration and sanitation equipment to accomplish the sanitation process as there is a high loading on filtration systems due to the fact there is high volumes of debris to be removed.

The poor residual effect of chlorine is a further contributing factor on the long and frequent requirement of the pool filtration and sanitation system on a chlorine or salt water pool to operate for many hours a day. Chlorine in swimming pools is mostly dissipated by ambient heat

and UV a small portion of the chlorine in a pool is actually used to disinfect the water the majority is lost to the atmosphere. When swimming pools are in use most, the hot weather (summer) this dissipation/loss is the highest as these are the hottest days usually with the highest UV. This is also the time when the highest load is on the power grid. The volatility and poor residual of chlorine is not in question, the fact that cyanuric acid is needed to be added to pool water when chlorine is used to try and stabilize this volatility bears out this short coming of chlorine. Furthermore cyanuric acid has a very questionable impact on human beings but if not used would in many cases render chlorine virtually useless as a pool sanitiser.

So overall Chlorine is slow to eliminate bugs and bacteria in swimming pools and the time it is available in the pool water to perform this task is very limited. Resulting in high costs to operate (power used) and maintain these chlorine based filtration and sanitizing swimming pool systems.

Enviroswim contrary to chlorine has an extremely high efficacy and extensive residual that is not effected by heat or UV the only thing that dissipates the Enviroswim sanitiser is killing bugs and bacteria. These facts can be supported by independent Govt labs on the efficacy of Enviroswim (Tweed Lab Reports). What Enviroswim did in the laboratory in 30 seconds chlorine took almost 15 minutes to accomplish. The residual of the Enviroswim is unquestionable via years of customer feedback and safe operating conditions. The result of Enviroswims high efficacy and excellent residual is a massive reduction in the operating times of the filtration and sanitising systems in the region of between 50 and 25% when compared to similiar chlorine based systems. It is even better as we have been able to operate pools on far smaller pumps and accomplish not just a similiar result to a chlorine based system with large pumps and long run times. Enviroswim have delivered lower operating costs for electricity.

Lower operating costs for chemicals. Lower time spent maintaining the pool and a far better swimming experience for the bather.

SAFE SIMPLE EFFECTIVE.

What amount of power savings might be achieved when in a hypothetical world Enviroswim would be adopted for Australian use. For an easy analogy lets say there are one million pools in Australia, this figure according to NGOs is much higher. These existing pools on average consume 1.5 kW of power including the pump and chlorinator for an average of 8 hours per day 365 day s per year. These figure will vary but from experience we would say this is a fair average overview.

So $1.5\text{kW} \times 8 \text{ hours per day} \times 365 \text{ days per year} \times 1,000,000 \text{ pools} = 4,380 \text{ million kW per year}$.

Let see what Enviroswim would consume based on previous facts.

So $1\text{kW} \times 5 \text{ hours per day} \times 365 \text{ days per year} \times 1,000,000 \text{ pools} = 1,825 \text{ million kW per year}$.

This represents an overall 60% reduction on electricity consumed if Enviroswim was used delivering a far better overall out come for the bather/pool owner.

Also peak demand loads on the generating grid can be controlled/alleviated as Enviroswim pools do not necessarily need to be run during the middle of the day unlike chlorine based pools.

Many Enviroswim pool owners choose to operate their pools during off peak periods sometimes during the night.

Proposed swimming pool electricity reduction schemes to date have proved to be unsuccessful.

1/ Variable speed pumps, very high capital cost for very little saving to the owner when all costs are added and in most cases a reduction in pool water conditions and increase in maintenance costs to correct low flows and slow turnover rates. Equipment early failure due to excessive run times.

2/ Proposed ability of energy companies to be able turn off pool pumps when peak demand in that area was excessive thus relieving load on power grid. This sounded good in principle but would have resulted in too many law suits due to people becoming sick from swimming pools that were dangerous due to lack of filtration and sanitation. Off peak is the owner's choice this would have been mandatory and would have failed, being very costly.

3/ There are clear guidelines and legislation for pool disinfection efficacy requirements issued by the government run [Australian Pesticides and Veterinary Medicines Authority](#) (APVMA). The APVMA guidelines require a pool disinfectant to demonstrate laboratory kill rates (log reductions) on bacteria and parasites within 30 seconds to prevent infection and bather to bather contamination. The suggested financial incentive offered to pool owners to allow their

pool to be turned off during periods of peak demand and by definition during the hotter months is in direct contradiction to the governments' requirements for a consistent satisfactory pool sanitiser. This then opens up the question of "duty of care" when energy suppliers offer a financial reward at the risk of reducing the health protection of the approved sanitiser. At the very least, the risk and facts should be clearly outlined to the consumer before they agree to such a proposal.

4/ A new incentive offers to pool owners to take up a similar process to number two above but voluntary and with a \$400 pay back to pool owner.

Sound good but we feel a total waste of time and money as this \$400 most definitely would be a better incentive as when the pool owner gets this money and needs their pool to run for what ever reason an extension cord will be used to circumvent any impasse caused by this program, thus wasting this money and time spent.

The basic problems that all these thought bubbles have working against them is the inefficiencies of the common sanitiser chlorine. The requirement that chlorine needs to be of a high volume in the pool and filtration need long operating times to compensate for chlorines short fall makes all these energy saving programs a waste of time and money. The customer if they want or needs their pool to run will circumvent all these programs. It has to be wanted by the pool owner and this is what Enviroswim can offer the pool owner and the power companies a win win situation.

My personal pool is always pristine Pool volume 50,000 litres situated South East Qld Cost to operate electricity Pump and Enviroswim combined = 610 Watts Run time per day 4 hours Days per year in 365

$0.610 \text{ kW} \times 4 \text{ hours per day} \times 365 \text{ days} = 890 \text{ kW per year}$

Against the average Australian back yard pool of

$1.5 \text{ kW} \times 8 \text{ hours per day} \times 365 \text{ days} = 4380 \text{ kW per year}$

This represents a reduction of 80% of power consumed by the average Australian back yard pool when Enviroswim is used.

We can even go further now with already available technology and make Enviroswim pool filtration and sanitation totally off grid with no need for pool equipment to be connect to the power grid...at a very low cost giving 2 to 5 year pay back with a projected equipment lifespan of 15 years.

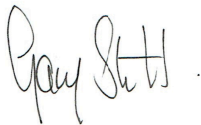
[Link to Tweed Lab Results Tweed ES3 Lab efficacy.](#)

Further information can also be found on our website. www.enviroswim.com

[Product over view video link.](#)

We are more than happy to meet or discuss in further detail at time that is convenient and suits you.

Kindest regards

A handwritten signature in black ink that reads "Gary Stutt". The signature is written in a cursive, slightly slanted style.

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