



# Power-smart swimming pools

A case study by



September 2012

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## 1. Introduction

The following case study has been developed as a means to highlight the benefits of covering a swimming pool with respect to power consumption, examining the demand of swimming pools on the national grid as well as the urgent need for South Africans to start practicing a more sustainable, less eco-reckless lifestyle.

With detailed analyses of test results, this study builds a clear and strong argument for EnergyGuard™ with savings statistics that are hard to ignore.

## 2. Overview of pools under local conditions

First, a look at swimming pools in the South African context.

- ***South Africans – the outdoor lifestyle***

With its warm, tropical climate, South Africans enjoy a typically outdoor lifestyle. Most parts of South Africa experience winters too cold to swim, but in warmer Northern provinces such as Limpopo, swimming is a year round activity.

Swimming pools are a common feature in most middle to upper income homes, with a strong design focus on outdoor living areas. In this income bracket, currently the money spent on pool and outdoor entertainment areas equals the amounts spent on kitchens and home entertainment rooms.

- ***Domestic swimming pools***

There are currently an estimated one million swimming pools in South Africa according to the National Spa and Pools Institute (NSPI).

Trends in pool design are currently favouring cleaner, more angular lines. Rim flow pools have become extremely popular in recent years and a clear trend in pool design is that of more environmentally-friendly pools.

Newly built pools are on average smaller than those of the 1970s and 1980s. The average volume of water in a typical domestic pool today is between 18 000 to 28 000 litres. Newer pump designs are considerably more water- and energy-wise, with many older, larger pool pumps being phased out.

- ***Indoor and heated pools.***

Indoor and heated swimming pools tend to prevail mostly in gyms, community centres and other commercial and professional swimming facilities. In domestic settings, indoor and heated pools are in the minority.

### 3. The Crises

- ***The power crisis***

Electricity tariff increases remain a factor in the local inflation outlook and are a major contributor to daily consumer pressures. While blackouts have become less frequent, the national grid still struggles to meet demand. Considerable investment in an upgraded infrastructure and new power stations promise to alleviate pressure however in the short term, the national power supplier continues to urge consumers to take small, more responsible steps in their daily habits. Part of the national energy saving awareness campaign includes messages to turn off or lower pool pump settings, underscoring the need to include swimming pools in more power-smart habits.

- ***Blue gold – the water crisis***

South Africa is a chronically water stressed country and water availability is one of the most decisive factors that will affect future economic development. Failure to adequately invest in water services and to collect, treat and reuse water efficiently is contributing to a situation whereby South Africa's demand for water could outstrip supply between 2025 and 2030.

It is said that future wars will not be about oil, rather about water (now dubbed blue gold) and attaining water security. Water has already been linked to war in modern times, eg recently in Libya. Access to clean drinking water is a human right, however it is a right that does not exist in many poor communities. With millions of South African still without access to safe water, local government continues to explore new sources of drinking water, including desalination plants and harvesting water from freshwater aquifers, all of which have a considerable environmental impact.

Consumers have three options: increase their own water supply (harvest rainwater), reduce demand, or reuse household water. Unfortunately, grey or recycled water is not recommended for pools as the ammonia found in household cleaning agents can erode the pool pump. Harvesting enough rainwater to maintain a pool is a problem of scale, especially in drought prone or low summer rainfall areas. This means pool owners' most practical choice is to reduce demand in their micro environment if they are to lighten their water footprint. Reducing demand is easily achievable by reducing evaporation through the use of a pool cover.

In typical local conditions, an average pool (8m x 4m) loses approximately 64 000 litres a year to evaporation if left uncovered.

- ***The planet's crisis***

There is irrefutable evidence that climate change is occurring. Preceding this century, no civilisation has ever experienced climate change at the rate it is being experienced now. It is too late for future generations to halt or reverse this catastrophe. Over the past 100 years, Earth has warmed by 0.74°C. 20 of the warmest years on record have occurred in the past 25 years and the 10 hottest years on record have occurred since 1990. The warmest decade has been the 2000s, and each of the past three decades has been warmer than the decade before.

A social phenomenon to come out of climate change is that of 'climate asylum seeker' or 'climate refugees', defined as people seeking humanitarian aid and experiencing forced relocation as a result of climatic catastrophes, for example, the victims of Hurricane Katrina and the Mozambique floods of 2000. Kenya's Camp Dadaab is the world's largest and most extreme example of humanity's failure to provide solutions to the problem of mass migration due to changing climates. Dadaab's population is currently 500,000. The world is expected to have 150 million climate refugees by 2050.

- ***The dawn of a regulatory landscape - South Africa's response to the crises***

In Europe, consumers are far more accepting of the demands placed on precious resources and readily embrace sustainable lifestyles with at least 80% of European pools covered. South Africa however has taken a while to follow but with global eco-pressure mounting, it is starting to take action when it comes to sustainability but there remains a perception that it is costly and often inconvenient to live 'green'.

Although South Africa is not subject to mandatory targets on greenhouse gas emissions under the Kyoto Protocol, government is making a concerted effort to be a team player within the international community in the climate change arena. The country's current energy consumption levels and achieving greater energy efficiency by changing domestic usage patterns is now critical given South Africa's heavy reliance on coal.

There is a very real likelihood that government will address this and the lagging mind sets around sustainability by way of carbon tax. Minister of Finance Pravin Gordhan indicated in his 2012 Budget speech that South Africa is considering introducing such tax with the aim of reducing harmful greenhouse gas emissions and moving South Africa to a low-carbon economy. South Africa is currently one of the 20 biggest emitters of greenhouse gases worldwide.

In the construction industry, new energy efficiency building regulations defined by SABS came into effect in November 2011, changing the way in which one approaches any new building project. Certain minimum requirements have to be adhered to and substantiated in any building plan submitted for approval, which means that the energy efficiency of any structure – including pools - is now under more scrutiny than ever before. This move is down to the need to clamp down on any building that has harmful effects on the environment and/or the public's health, promoting eco-friendly practices over those heavy on non-renewable fossil fuels. It will also lessen pressure on the electricity supply grid, in line with the national green economic strategy.

It has dramatically changed the property development sector and has had a direct knock on effect across the pool industry. Now, when planning a pool, one has become far more critical of a pool's carbon footprint, opting for accessories such as pool covers that assist in lowering the footprint. The regulations require that new buildings and extensions be designed and constructed in such a way that they are capable of using energy efficiently without compromising user needs. The standards are expected to become more stringent in the future once the initial introductory phase has stabilised.

The regulations – not to be taken lightly - have already led to some homeowners forgoing a pool entirely however such drastic measures are not always necessary. Depending on the home's other electrical fixtures and with a bit of eco-savvy, a pool can still be planned for without it having such a drastic impact on overall power usage on the property. One need not compromise on design fundamentals, for example pool volume and surface area, to lower its energy consumption.

## **4. The pool owner's solution**

- ***What is a pool cover?***

First generation pool covers were merely a simple sheet of plastic that acted as a vapour barrier i.e. prevented water loss. Generally, the covers were difficult to take on and off and were very heavy the covers weathered quickly and tears were common, making replacement of the cover an annual expense.

Today's covers, or our new generation covers, have become considerably more technical and scientific and while the old barrier principal applies, materials are varied and manufacturing processes are now more advanced and better suited to pool usage. Additives in the materials stabilise and protect the cover when exposed to UV rays and general weathering. A good quality cover can be expected to last for five years with correct care and storage.

The accessories one can now fit to a pool cover are also numerous. From reinforcement kits on leading edges, wind protection devices to prevent lifting, rollup stations to aid use, to clamps and bolts made from sophisticated nylon – pool covers have become an art form in themselves and are considerably more chic than their predecessors of the 70s. And, as our environmental consciences are awakened, pool covers and the industry as a whole will see unprecedented growth and even more superior technologies being applied.

- ***The principles of a pool cover***

With a thermal pool cover, the polyethylene sheet forms a complete barrier over the pool water, making direct contact with the pool water. Generally, the water under a pool cover is not exposed to the natural elements i.e. sun, wind and rain. Pool covers are sophisticated and varied options are used to suit different customer requirements.

By comparison, a pool net covers the pool but the water remains visible and exposed to the natural elements. Pool nets are commonly used for child safety and offer neither thermal and environmental benefits nor maintenance-related savings for the pool owner.

Solid safety covers remain one of the better choices when it comes to child safety and drowning prevention, favoured over nets, alarms and fences for their ability to completely seal off the pool for children. By keeping water cleaner and curbing evaporation, solid safety covers have power-saving and environmental benefits too.

A leaf net differs from a pool cover and a pool net in as much as the water is still exposed to the elements through the fine mesh-like material, designed purely to catch debris.

- ***Why pool covers?***

The benefits of thermal pool covers are numerous:

- Reduces energy consumption (reduced filtration/pump time)
- Reduces chemical consumption
- Eliminates water evaporation
- Increases pool temperature
- Depending on the cover, inhibits algae growth
- Reduces debris contamination
- Depending on the cover, can reflect or absorb the sun's heat

## 5. EnergyGuard™ – a high performance pool cover to save power and reduce algae

- **Background to development of the EnergyGuard™ cover**

When the local energy supplier faced considerable supply versus demand challenges in 2006, PowerPlastics Pool Covers looked at the issue in conjunction with its existing product range, determined to match the crisis with an insightful and stylish solution for pools that lessened the impact of pools on the stressed infrastructure. While a good selection of thermal covers already existed, there was no cover specifically to target algae and therefore decrease filtration.

To reduce power consumption in the domestic setting, PowerPlastics Pool Covers developed EnergyGuard™, a power-smart thermal cover, collaborating with UK based polyethylene manufacturer Plastipack. The technical brief was to conceptualise a thermal cover that was dark enough to prevent light entry and thus reduce filtration times. Rather than treat the algae, the new cover needed to have a more prophylactic approach and prevent its occurrence altogether by starving algae of its key nutrient – light.

EnergyGuard™ entered the market in 2009, highlighting the scope of financial and power savings achievable, based on independent test results carried out by Universities. Plastipack has with permission taken PowerPlastics Pool Covers original concept and gone on to supply the EnergyGuard™ material to other pool cover suppliers in South Africa. It has also launched the product across Europe with great success among those who seek a sustainable lifestyle and reduced carbon footprints.

In South Africa, EnergyGuard™ has earned recognition as the leading power-smart pool cover. While the severe shortages of power may have been somewhat alleviated, local tariffs do continue to add inflationary pressure for the average home owner.

- **EnergyGuard™: materials and specifications**

	
Thickness of material	500 micron polyethylene GeoBubble material
Colour	Dark grey surface and black underside
Reduces pump / filtration times*	By up to 50%
Reduces water evaporation*	By 98%+
Increases water temperatures / free solar gain*	Absorbs sun's energy up to 4 <sup>0</sup> C, adding up to 4 <sup>0</sup> C to water temperatures
For heated pools, reduces electrical heat source consumption*	By over 50%
Reduces debris contamination	Yes
Inhibits algae growth*	Yes
Reduces chemical consumption*	Up to 70%
Life span	Can be expected to last 4-6 years with proper care
Current cost per metre	R104 plus VAT
Payback period	For an 8m x 4m pool in local conditions, the pool owner has a payback period of 18 months, based on savings achievable and current water, power, chemical costs.

*\* Figures from independent test carried out by Brighton and London Metropolitan Universities in conjunction with Plastipack Ltd and PowerPlastics Pool Covers. Please refer to Test Results section for detailed results.*

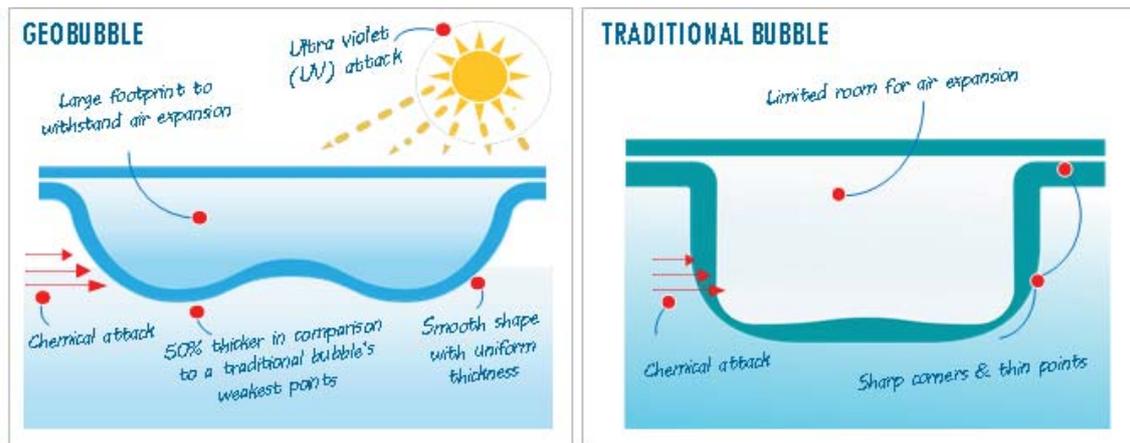
- **GeoBubble – the high performance bubble technology used in EnergyGuard™**

In early 2012, EnergyGuard™ was included in a technical upgrade to a new bubble material called GeoBubble. This upgrade saw the actual bubble changing shape and performing better as a result.

A traditional bubble cover has several inherent weaknesses in design, including thin points and high residual stress. These weak points are quickly broken down by UV and chemical attack, resulting in premature failure of the cover. Over a five year period, significant research has gone into GeoBubble - the longest lasting pool bubble cover material available.

- Unique patented design of two bubbles joined together by a waistline centre section.
- The material contains no weak points or stress due to the smooth interconnected curves.
- The overall thickness of a GeoBubble is 50% greater than a traditional bubble.
- GeoBubble will increase the cover's lifespan by 25%.
- GeoBubble is 100% recyclable (Grade 4 LDPE recycling).

## GeoBubble:



- **Factors affecting pool maintenance and the associated benefits of EnergyGuard™**

- **Filtration / power consumption**

A pool's capacity to consume large amounts of power was the fundamental reason for the development of EnergyGuard™. In an average household, the pool pump accounts for 12% of the total power usage. This high performance power saving cover, halves this consumption figure.

Because EnergyGuard™ has a dark grey surface and black underside it prohibits light entry into the water and photosynthesis becomes impossible. This in turn starves algae of its key nutrient – light. This allows pool pump settings to be scaled back by 50% without compromising on water hygiene.

Working as a physical barrier, the cover also prevents debris entering the pool. The pump is only required to filter out the human contaminants produced when using the pool. This means that the pool can be shut down without any filtration or chemical input when not in the swimming season.

- **Heat retention**

A pool can lose heat in a variety of ways, but evaporation through the pool surface area is the greatest source of energy loss for swimming pools. Evaporation has an impact due to the fact that evaporating water requires tremendous amounts of energy. It takes 0.001163 kWh of energy to heat one litre of water by 1°C. Each litre of water at 27°C that evaporates will waste 1.218 kWh of energy.

By curbing evaporation and protecting the water from exposure to cool air, EnergyGuard™ keeps heat (energy) in the pool. With excellent its heat retention capabilities, it allows for autumn and spring swimming seasons to be extended by 6 to 8 weeks either side of winter.

- **Solar gain / free energy**

EnergyGuard™ is an affordable way to heat a pool naturally and to maintain ideal swimming temperatures without electrical heating devices or solar panels. It utilises solar absorbance to harness the energy of the sun as it falls onto the surface of the pool.

As tests show, EnergyGuard™ raises the water temperature to 4°C warmer than the ambient temperature. The cover's unique dark grey top surface absorbs the energy, heating the cover which then radiates the heat into the pool's top surface. The heat is then transferred throughout the pool via the natural convection of the water.

It takes 1.16kWhs of energy heat 1litre of water 1°C for an 8m x 4m swimming pool with a volume of 41600litres the energy requirement to raise entire volume of the pool 1°C becomes 48.256kWhs.

- **Heat pumps / heated pools**

Where pools are heated with independent electrical sources, the heat retention and solar gain properties of EnergyGuard™ mean that heat pump settings can be lowered by 50%. Any external heat source becomes considerably more effective and at far lower settings, translating into significant power savings.

Where solar heating is used to heat a pool, it is possible to invest in up to half the amount of panels normally required for an uncovered pool.

Heated pools also have higher levels of evaporation, curbed by 98%+ when an EnergyGuard™ is in use.

Autumn and spring swimming seasons can be extended with EnergyGuard™ by 6 to 8 weeks either side of winter, without any electrical or solar heat pumps.

- **Chemical input**

When sunlight enters pool water, photosynthesis occurs which subsequently results in algae growth. Typically, chemicals such as chlorine are used to prevent algae growth and maintain optimal water hygiene, eliminating bacteria and other pathogens harmful to humans. However, when chlorine is exposed to sunlight, it dissipates into the atmosphere and contributes to greenhouse gas emissions.

Because the EnergyGuard™ curbs light entry and therefore algae, chemical input can be scaled back by 70% without compromising water hygiene. Shielded from the sun, chlorine can no longer evaporate either. There are also health benefits to swimming in pools with lower levels of chlorine – a chemical that can lead to allergies, skin problems and hypersensitivity.

- **Evaporation / water losses**

In average local conditions, an average (8m x 4m x 1.2m deep) pool loses approximately 64 000 litres to evaporation if left uncovered. The principal causes of evaporation and water loss from pools include:

- a. *Pool surface area*: the bigger the pool, the greater the surface area and the greater the volume of water lost through evaporation.
- b. *Ratio of water and air (ambient) temperatures*: the greater the difference between water and air temperatures, the higher the evaporation rate. Heated pools experience significantly higher evaporation rates.
- c. *Humidity*: the drier the air, the greater the evaporation rate. In extremely humid conditions, less evaporation occurs.
- d. *Wind*: wind is the primary cause of evaporation in regions with high wind velocity.
- e. *Aeration*: fountains and splashing increase evaporation losses.

By minimising the water's exposure to the natural elements, water lost to evaporation is reduced by 98% + with EnergyGuard™ which therefore reduces the water 'top ups' needed in order to run the pool pump.

- **Winter maintenance or closing the pool for extended periods**

Most provinces in South Africa experience winters too cold to swim in outdoor unheated pools, hence the majority of pool owners face several months a year during which their pool lies dormant. In order to retain visual appeal, a winter pool will still require regular maintenance (filtration, cleaning and chemical treatment).

EnergyGuard™ allows for a pool to be covered and forgotten about. When preparing a pool for the new season, EnergyGuard™ does away with having to filter, backwash and vacuum the pool to remove algae, leaves and other garden debris to make it swim-ready. There is no need to shock the water with chemical treatments either when the pool is reopened for the swimming season.

- **Ecological footprints**

An ecological footprint looks at four areas: carbon (including transport and home energy), goods and services, housing and food. A carbon footprint only looks at the net greenhouse gases emitted.

EnergyGuard™ shrinks carbon and ecological footprints by reducing a home's wastage of power and natural resources. Tests show that it not only contributes to environmental sustainability but will also pay for itself within a short period of time on the savings made on water, electricity and chemical costs.

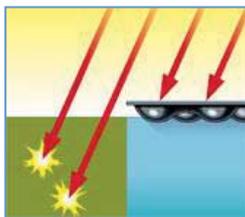
- **Average pool maintenance costs**

The table below shows the average maintenance costs for a pool measuring 8 metres by 4 metres and 1.2 metres deep, with a volume of 38 400 litres, during the average summer swimming season.

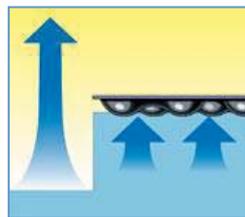
Pool Costs	Monthly pool costs	Savings using EnergyGuard™
<b>Electricity</b>	80.89	40.44
<b>Water</b>	67.25	67.25
<b>Chemicals</b>	112.00	78.40
<b>Total</b>	<b>260.14</b>	<b>186.10 (71% saving)</b>
<b>Cost of cover</b>		<b>3328.00</b>
<b>Payback in Months</b>		<b>17.88</b>

## 6. The Tests

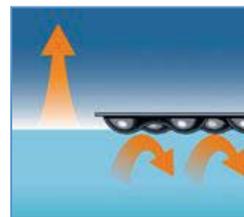
The following tests were carried out by Plastipack Ltd, in conjunction with the University of Brighton and London Metropolitan University. While these tests were conducted under UK summer conditions, the savings figures have been converted to a South African equivalent.



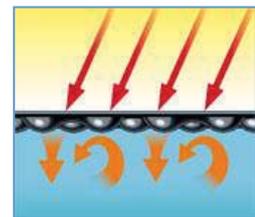
**INHIBITS ALGAE GROWTH**



**ELIMINATES EVAPORATION**



**RETAINS HEAT**

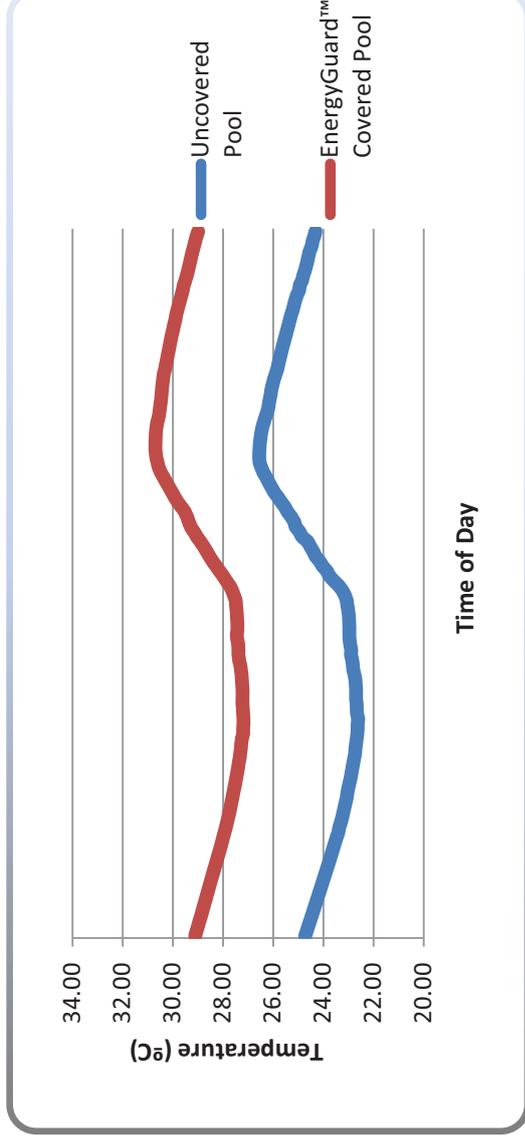


**ABSORBS SUN'S ENERGY**

## 1. EnergyGuard™ tests



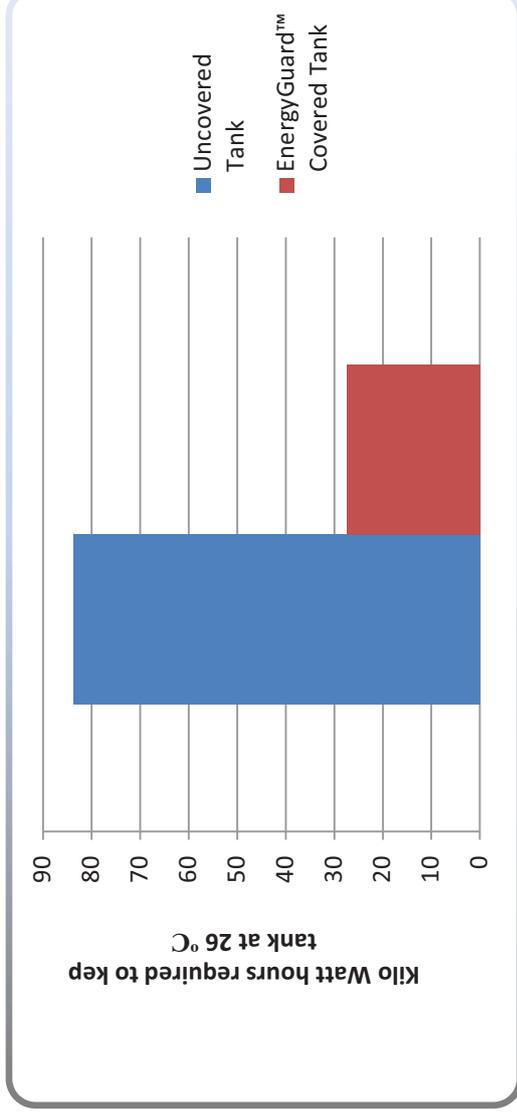
### Temperature Tests



- During this experiment, there was a maximum temperature difference of 4.70 °C between an EnergyGuard™ covered pool and an uncovered pool. This highlights the increased amount of solar energy gained. The 14-day test was conducted with average mean temperature of 20.48 °C. In warmer climates, more solar energy would be gained.
- In hotter climates the difference between an EnergyGuard™ covered pool and an uncovered pool would increase. This 14-day test was conducted with average temperature of 20.48 °C; in warmer climates more solar energy would be absorbed increasing the effectiveness of the cover. The testing showed a 4°C increase in pool temperature when using an EnergyGuard™ cover.
- This experiment was conducted using two unheated outdoor pools – a 3.66m round above-ground pool with a water depth of 0.565m and containing 24,410 litres of water, over a 14-day period. The selected data was taken over a 24 hour period.

- **EnergyGuard™: energy consumption test on a pool with an electrical heating source**

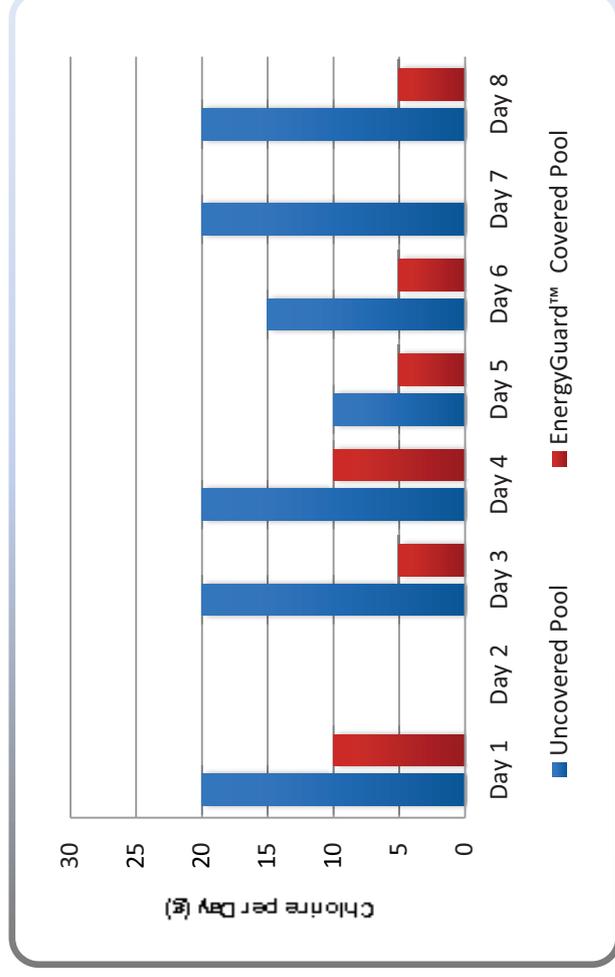
- The energy savings tests above ran for 8 days. Two outdoor heated test tanks 1 x 1.5 x 0.5 metre were set up. The tanks were heated using a 500 Watt Titanium water heater connected to a thermostat set at 26°C.
- The water temperature was measured at varying depths in the tank to give a true reflection of the water temperature. Each heater was connected to a wattage meter to give exact energy usage per tank. Over the eight day test period EnergyGuard™ reduced energy usage by 67.16%. This is a significant saving when added to a EnergyGuard™ cover's ability to reduce pump filtration by 50%.



Energy Consumption	Overall Mean Temperatures	KW/ hours Used	Percentage saving
Uncovered Tank	26.02	83.77	NA
EnergyGuard™ Covered Tank	27.45	27.54	67.17%

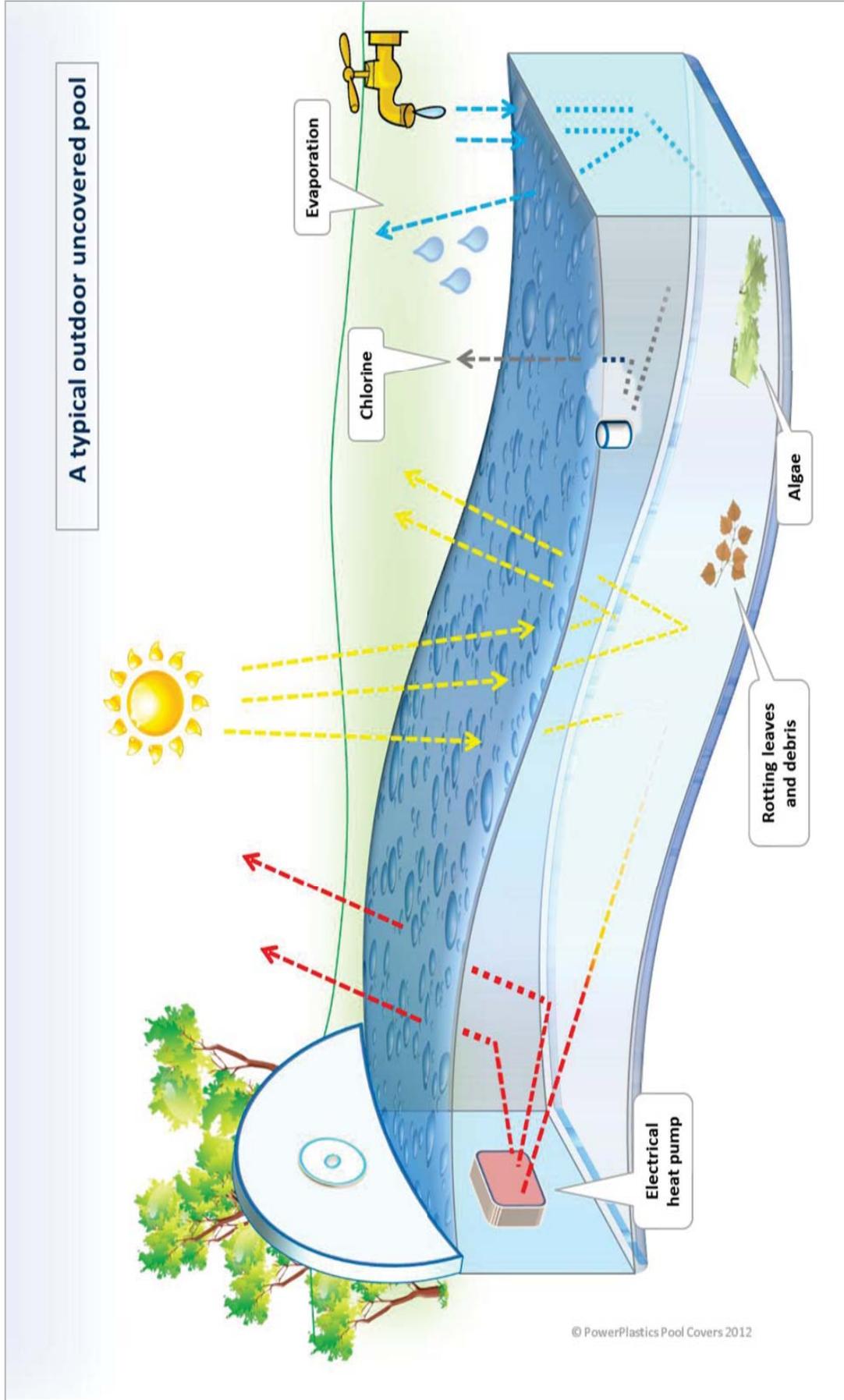
- **EnergyGuard™: chemical saving tests**

- During the experiment 4 x 3.66 metre unheated outdoor pools were set up. The pools had a water depth of 0.565 m. EnergyGuard™ will save up to 70% of chemical consumption in a pool by stopping chemical loss through UV reaction and water evaporation, while preventing debris entering the pool and inhibiting algae growth. This is indicated by an overall drop in required chemicals with two days where no chemicals were needed to balance the pool over the eight day test period.
- Three pools were covered with pool covers and the fourth was left uncovered as a control pool. The control pool is used to compare differences in chlorine consumption between an uncovered pool and an EnergyGuard™ covered pool.
- Each pool was kept within the Spatex standard, the British body for stating the industry standards. This is between 2 to 4 ppm combined Chlorine and 7.2 to 7.6 Ph level.

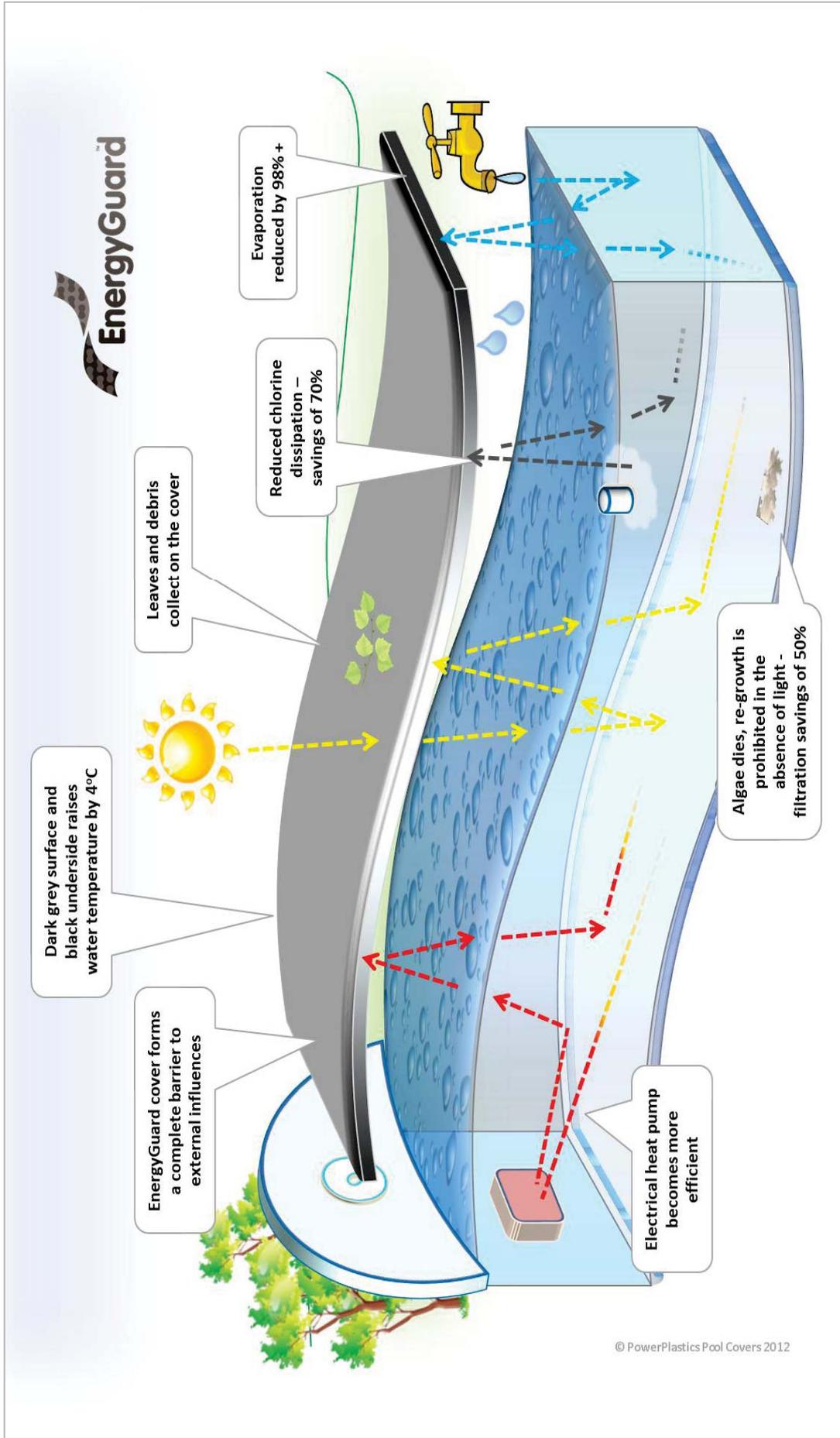


Chemical savings	Chlorine (g) usage
EnergyGuard™	40
Uncovered Pool	125

EnergyGuard™ diagram A: a typical, uncovered outdoor pool.



EnergyGuard™ diagram B: an outdoor pool covered with EnergyGuard™



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## 7. Market Feedback

### *Dave Lund, Landscapes, Boschenmeer Golf Estate, Paarl*

Boschenmeer Golf Estate is a residential development near Paarl, developed on eco-friendly principles and promoting sustainable residential living. Dave Lund of Landscapes, in his capacity as a private landscaping consultant, has advised a number of residents on fitting a PowerPlastics Pool Covers EnergyGuard™ cover, and has shared the following feedback:

"Many residents at Boschenmeer Estate travel extensively during winter months, spending only a few months a year on the Estate. These residents needed a pool solution that was low on both maintenance time and costs while they are not in residence, often preferring to switch off appliances completely to minimise unnecessary wear and tear – and this includes their pool pumps.

"When advising these residents on pool covers, I calculated that by shutting their 5m by 3m pool down for six months a year, they would achieve savings of roughly R910 on pool labour alone, plus the savings on chemicals, water and electricity. Only intermittent pool services would be necessary in the interim and their pools will now require minimal input when they return and unpack the pool for summer."

[At the time of compiling this case study, no monetary savings figures were available from the Boschenmeer residents.]



An EnergyGuard™ cover on a Boschenmeer Estate resident's pool

NB: this picture shows an EnergyGuard™ cover prior to the upgrade to the grey / black GeoBubble material.

## 8. About us: PowerPlastics Pool Covers

At PowerPlastics Pool Covers we use insight to pair the right pool cover to both the pool and its owner in order to achieve the right blend of intelligent, holistic and lifestyle enhancing solutions. Whether it is for a pool owner striving to be more considerate of the environment, a parent needing to safeguard children from drowning or a discerning homeowner wanting a sleek, beautiful pool cover to complement their home, we understand these needs as well as the responsibilities that come with owning a pool.

We have been covering pools for over 20 years and our longevity and technically superior manufacturing in impressive turnaround times, are what sets us apart in the industry. Product refinement is an ongoing process and if there is an issue affecting pool owners (eg. the water and power crises), we have developed unique pool covers to address it.

We have our own sales teams based in Gauteng and the Western Cape and have a national and regional presence through a wide dealer network. The company has experienced steady growth and today enjoys well-earned recognition as the supplier of choice in this industry.

PowerPlastics Pool Covers has strong representation on industry watchdog National Spas and Pools Institute's committee. In our capacity as an industry leader, the company has assisted the Johannesburg Municipality in drafting their pool safety legislation, an involvement that complements our ongoing educational drive to bring about better awareness on pool safety and child drowning prevention, and to ensure that every pool in the country is a safe one. In 2011 we launched, TopStep, the home of pool safety which is an educational blog that seeks to educate pool owners on child drowning prevention and to guide the public through the Pool Safety By-Laws in South Africa. The initiative is a platform for intelligent debate and offers insight from the industry and public alike. Visit [www.topstep.co.za](http://www.topstep.co.za) for more info.

Child safety aside, other audiences include the eco-conscious and sustainable lifestyle sectors, given our popular range of water- and energy-saving pool covers. Currently, we have a strong sales focus on pool owners in the drought stricken Eastern Cape.

PowerPlastics Pool Covers' automatic range has enjoyed an excellent uptake in the South African luxury property and aspirational sector, allowing us to forge strong relationships in architectural and design fields.

Over the last two decades, we have broken new ground in many areas of the pool cover industry and do not intend to stop now! Pool covers are just starting to come into their own, and the PowerPlastics Pool Covers brand is perfectly positioned to champion the growth. Whether one starts with our simple leaf net or our Roldeck, the Rolls Royce of pool covers, we aim to bring South African pools in line with their European counterparts, which effectively means covering 80% of the pools in the country.

Customers don't just leave with a pool cover, rather they leave with a stylish lifestyle choice. Moreover, even if no purchase is made, the pool owner comes away more knowledgeable, equipped with new insight and an awakened conscience.

## 9. Image Gallery:



This picture shows a pool that was covered with EnergyGuard™ for three months and received no filtration or maintenance during that period. On removal of the cover, the water was crystal clear.



EnergyGuard™ has a dark grey surface and black underside

## 10. Conclusion

*Only when the last tree has died, the last river has been poisoned and the last fish has been caught, will we realise that we cannot eat money.*

**Cree Proverb**

EnergyGuard™ was developed specifically to meet South Africa's need for innovation in the swimming pool industry and has had a profound impact on pools' power consumption at local and global level. Born from a wide reaching power crisis, this unique pool cover continues to evolve using world class technology and manufacturing.

The principle is simple.

For centuries, humankind has been covering his precious possessions to protect them from external forces and damage, be it putting a roof on his dwelling, cling wrap on food, or simply applying sun block to avoid cancer. Ironically, planet Earth cannot be covered and the sad reality is that our planet does not need protecting from other natural forces, it needs protecting from man himself.

Owning a swimming pool comes with an environmental responsibility. Pool owners need to start examining their green conscience and adopting practices that will either halt or slow the timelines of catastrophe. An EnergyGuard™ pool cover is one of the first steps to take if you really are serious about your footprints.

And for pool owners still sitting on the sustainability fence, the daily financial savings achievable with an EnergyGuard™ cover cannot be ignored. It is one of the smartest financial decisions of its time given the short payback period and high return on investment. The number of South Africans who do not watch their household budgets are in the minority so be it green reasoning or financial, EnergyGuard™ makes good sense for pretty much every pool owner out there.

EnergyGuard™ represents the bigger picture.