INTELLIGENT ENERGY +

SUSTAINABLE SOLUTIONS

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What is Efficiency+

Energy efficiency simply means using less energy to perform the same task. **OGS speciality is combining technologies to achieve compounded energy savings** across homes, commercial and industrial settings. We provide efficiency via world class innovative technology solutions that have been rigorously tested and measured.

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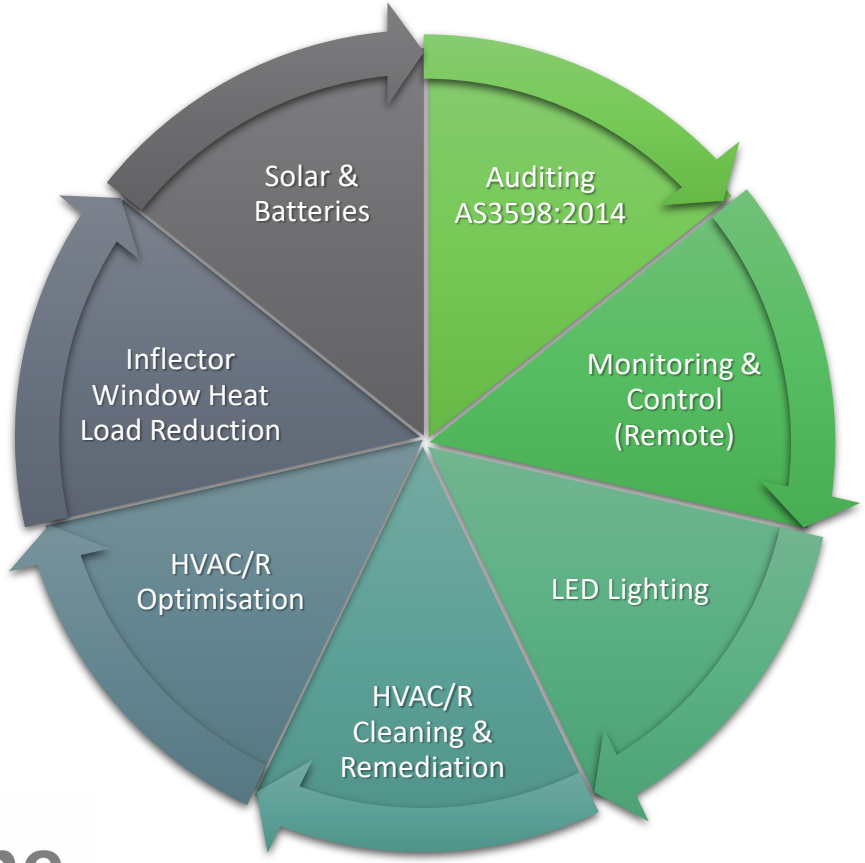
In building applications, we not only can achieve a significant energy saving, We also get these additional improvements:

- Improved lighting levels
- Reduced heat load from lights
- Reductions of HVAC Energy Use
- Improved indoor air quality bringing air levels in line with AS 3666
- Reduction in airborne viruses, moulds, and bacteria.
- Prolonged HVAC Plant Life
- Significantly reduced window heat loads
- Significantly reduced building heat loads
- Passive design allows better thermal comfort
- Reduced glare and UV
- Reduced energy (kWh) & Load (KVA) costs
- AS3598:2014 Energy Auditing

What we do



Our end-to-end solution includes:

- Energy Efficiency upgrades and improvements
- Level 1,2 & 3 AS 3598:2014 Energy Auditing Service
- IMPV Monitoring & Verification
- Asset Registers
- Bill analysis
- Accessing Government rebates and grants
- Inflector heat barrier
- HVAC cleaning and optimisation
- Lighting
- Renewable Energy and Storage

Our focus is on savings, ROI & Carbon Reduction

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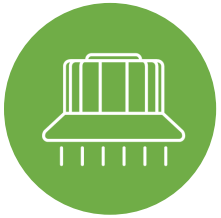
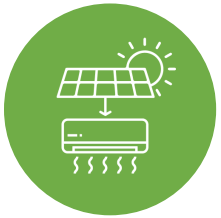
What we do



Lighting

Lighting is often the ‘quick win’ in energy efficiency. Through an assessment of existing lighting, an analysis of needs and correct design, many projects have a fast return on investment as well as an improvement in the work environment.



Solar Air Conditioning/ Refrigeration Optimisation

Air conditioning and environmental systems (HVAC/R) account for up to 65% of a building power usage. For this reason, HVAC / R should be one of the first areas addressed when trying to reduce the energy usage of a facility

Solar & Alternate Energy

OGS has a broad range of solutions that can be integrated into almost any suitable commercial or industrial site. We have extensive experience in the facilitation of major generation projects including building of a financially viable energy generation system as well as management of government documentation and regulation.

Inflector Heat Shielding

Inflector is a cost effective, energy efficient and non-disruptive solution to window replacement. Inflector performs better than double glazing at protecting homes or buildings from external heat.

Optimisation

ENSOL has a proven track record in management and monitoring of power systems in both commercial and industrial applications. We can customise and provide a range of solutions from short term, on site, measurement and verification equipment to permanent management.

Air Balancing

HVAC systems have to constantly overdeliver in order to satisfy the thermostat that sits between the cool air on the floor and the hot air under the ceiling

In the Australian climate the movement of air is the largest user of energy in any air conditioning system.

LED Lighting Upgrades

Lighting is the low hanging fruit

Lighting is often the ‘quick win’ in energy efficiency. Through an assessment of existing lighting, an analysis of needs and correct design, many projects have a fast return on investment as well as an improvement in the work environment.

LED Lighting Upgrades

- Lighting is often the most simple energy efficiency activity that a business can do.
- It gives a highly predictable Return on Investment –often with a payback period of under 2 years
- For any business that has not yet gone down the path of examining efficiency, this should certainly be on the agenda
- Even for companies that have carried out some lighting upgrades, it is still worth investigating
- New products which are highly efficient and have lifespans of 30,000 – 70,0000 hours means that savings can be significant based on older technologies
- OGS will review your initial job is to examine your usage, calculate the predicted savings and show you what savings can be made

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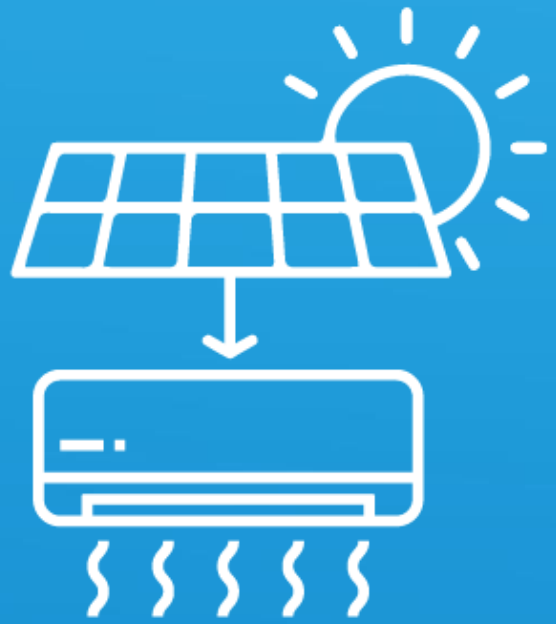

Air Conditioning / Refrigeration Optimisation

Air conditioning and environmental systems (HVAC/R) account for up to 65% of a building power usage. For this reason, HVAC should be one of the first areas addressed when trying to reduce the energy usage of a facility.

Solar Air Conditioners

70-80+%
Energy Savings

Hybrid Solar Air Conditioners –

These units are a direct DC Split Cycle air conditioner that run through the day directly off solar PV panels. These can be supplied as 3.5,5.0kW & 7.0kW Units in Split and 5.0 & 7.0kW Ducted Units. All units have Wi-Fi Control and monitoring.

These units will save approximately 80% of the energy costs in heating cycle and up to 80% in cooling cycle.

Pre-condition the space for free during the daytime

SOLAR AC DC
JUST COMMON SENSE

AHRI CERTIFIED
www.ahridirectory.org
ENERGY STAR
Intertek

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HVAC/R - Health

Heating, Ventilation and Air Conditioning / Refrigeration offer major opportunities

HVAC/R can account for up to 65% of the total power consumption for a business. Therefore, any improvements in the performance of your system offer a good return on your investment.

- OGS uses technology developed by Aeris Environmental which offers several benefits:
- Cleans and protects HVAC hardware
- Lowers operational costs
- Extends the lifespan of equipment

The Aeris Optimisation & protection platform is a 3 stage process:

Step 1

Treat and remediate

- This decreases running costs as well as improving the indoor air quality

Step 2

Optimisation

- Control of units to change the setpoints and reduce power consumption

Step 3

Protection

- External coatings prevent corrosion that extends asset life

TYPICAL SAVINGS CAN BE 15-20% OF HVAC/R COSTS

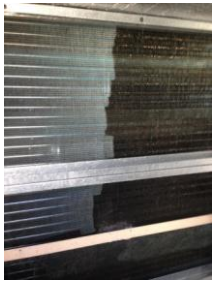
Biofilm Prevention

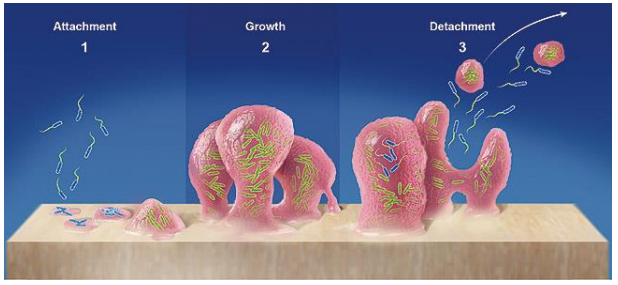
BIOFILMS ACCOUNT FOR OVER 60% OF HUMAN INFECTIONS AND CHRONIC CONDITIONS

Biofilm is problematic because bacteria latches on to it and releases a sticky substance that continues to grow on the biofilm unless is it cleaned regularly. Biofilm is hard to remove because these polymeric substances protective shell. The protective shell that grows on the biofilm makes it difficult for traditional cleaning systems to remove.

The benefits of cleaning your evaporator coils with AerisGuard to remove Biofilm include:

- Energy Savings: Lowers energy costs by improving HVAC system heat transfer and increases net cooling capacity & increases air flow.
- Maintenance Savings: Continuously cleans coils, drain pans and drain pipes.
- Significantly Improved Indoor Air Quality to above AS3666 and is environmentally friendly.
- Improved performance of air conditioning and refrigeration systems.





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SunTrac Commercial HVAC/R Systems

25-40%
Energy Savings

Integrates with new HVAC/R equipment installations, and can upgrade existing systems:

- Package/Split Units
- Mini/Multi Split Units
- Chiller Systems
- VRF/VRV Systems

Compatible with most high efficient HVAC/R equipment:

- Variable Speed
- Multi-Stage
- Variable Capacity

SunTrac Smartpanel Features:

- RiteTemp Temperature Control
- Scalable to over 500 Tons
- Simple Installation
- Self -containted Panel
- 5 Year warranty

Copeland brand products | EMERSON Climate Technologies | SOLAR SRCC | ACCA Air Conditioning Contractors of America | MADE IN U. S. A. | one green solutions energy / water / waste

Optimisation

OGS has a proven track record in management and monitoring of power systems in both commercial and industrial applications. We can customise and provide a range of solutions from short term, on site, measurement and verification equipment to permanent management.

Variable Speed Drives – VSD’s

8-10% kWh Savings Up to 50% KVA Demand

- Variable speed drives assist in remove peak loading from the electrical supply at the motor and correct power factor and filter electricity across motor loads.
- Installed on refrigeration compressors, pumps and air compressors, VSD’s can reduce your kilowatt hour usage by 8-10% and significantly reduce peak KVA demand by up to 50%

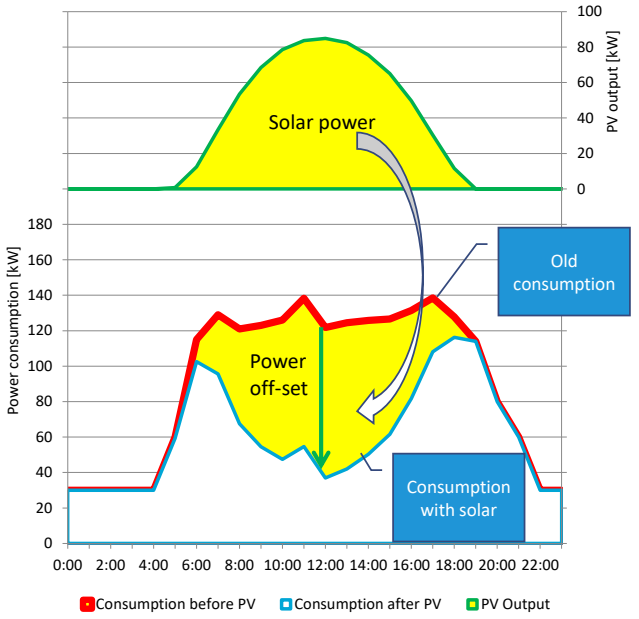
Solar & Alternate Energy

OGS has a broad range of solutions that can be integrated into almost any suitable commercial or industrial site. We have extensive experience in the facilitation of major generation projects including building of a financially viable energy generation system as well as management of government documentation and regulation.

Solar Power & Alternative Energy

SOLAR POWER IS A LONG TERM INVESTMENT THAT NEEDS CORRECT ANALYSIS

- Solar will have a payback period of 3-5 years depending on your usage and how much you pay for power per kWh.
- Solar is a long-term investment and therefore modelling matters a great deal.
- There are many mistakes which are possible to make in modelling which can easily overstate the business case for solar power.
- Only the power which is simultaneously produced AND consumed is valuable. That power is worth the variable kWh rate that the business pays for power.
- Solar decreases your demand on the grid. It does not make you independent. This solar power blends seamlessly with your grid power.
- Monitoring is critical to the success of any solar system.
- OGS is technology agnostic – we look at multiple suppliers of panels and inverters and use what will perform best for you.



Solar power offsets your day-time consumption

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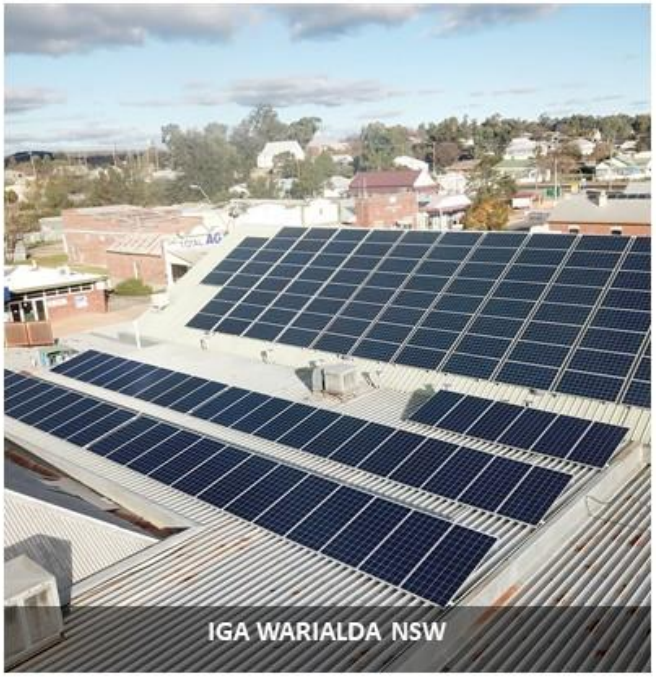
IGA COONABARABRAN NSW



IGA WARIALDA NSW

INVERTIGRO – ROSEBERY NSW

COMPLETED PROJECTS 2020 / 21

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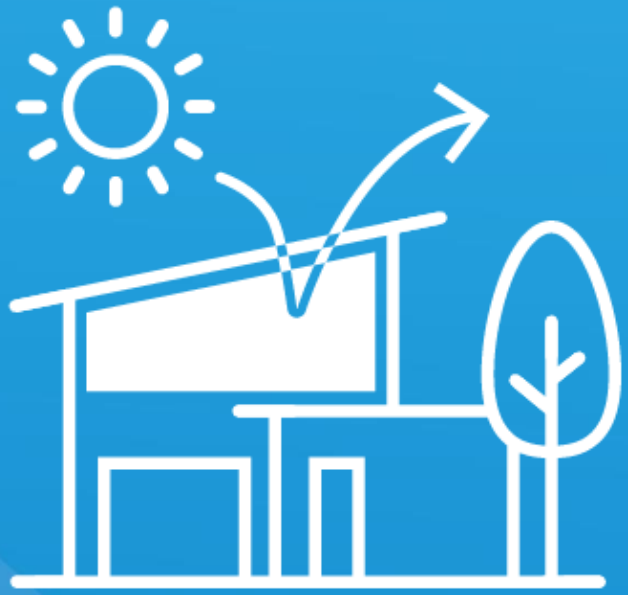
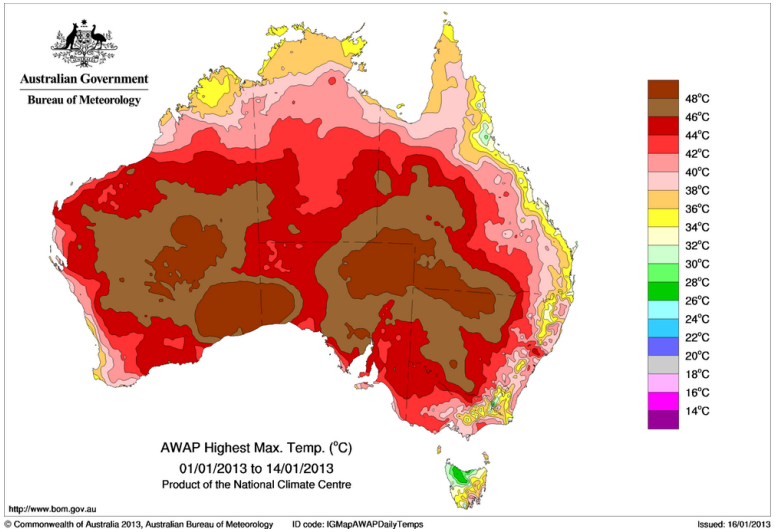
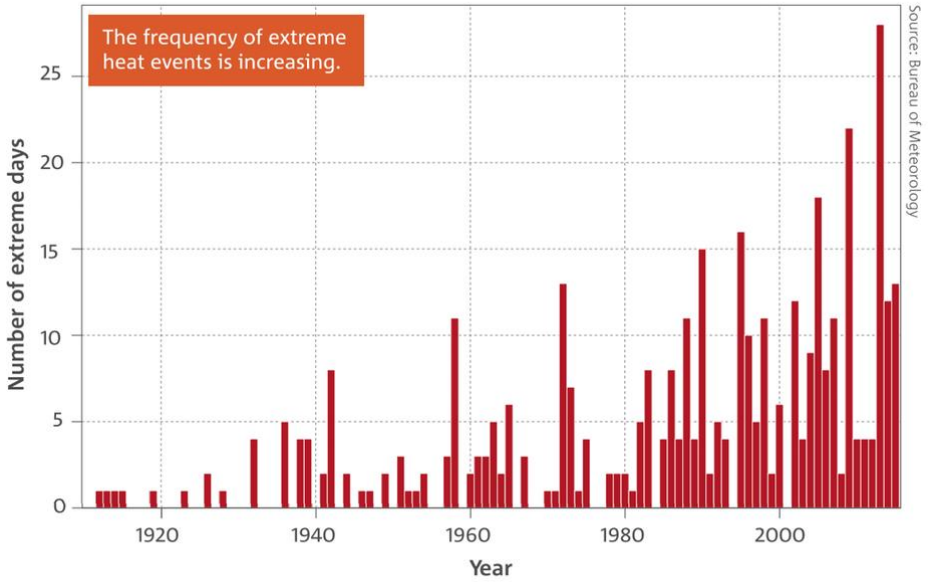


Inflector Heat Shielding

OGS has a strong focus on increasing the efficiency of the existing building. By managing the thermal loads on and in the building we can significantly impact the health of the building and the effects of extreme weather events. (Heat)

Increasing Temperatures





Since the year 2000, there has been an increase in the amount of extreme weather events particularly with extreme heat days.

These periods cause extensive problems to the way our existing buildings perform from and energy load level and personal comfort. Australia has always been a hot dry continent but this is now increasing.

With increases in temperature and escalation in extreme heat days, the opportunity is to introduce a product specifically designed to control these extremes with limiting its impact on light and view and energy costs.

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Building Thermal Management

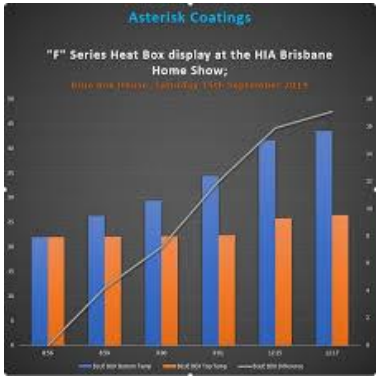
30-60%
Energy Savings

INCREASED THERMAL LOADING ON BUILDINGS DIRECTLY AFFECTS PEAK LOAD DEMANDS THROUGH REFRIGERATION AND AIR CONDITIONING

HVAC/R can account for up to 65% - 80% of the total power consumption for a business. Therefore, any improvements in the performance of your system offers a good return on your investment.

OGS uses technology developed by NASA and nanotechnologies which offers several benefits:

- Reduces window and roof temperatures by 5 – 10 degrees
- Lowers operational costs
- Extends the lifespan of HVAC systems / Internal fixtures and roofing
- Reduces window heat load gains
- Improves thermal performance of the building & diminishes thermal lag



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Inflector Window Barrier

GLASS IS THE WEAK POINT IN A BUILDING ENVELOPE

Inflector technology is a single application solution that combats all methods of heat transfer and energy loss through glass, with minimal obstruction of natural light or views to the outside.

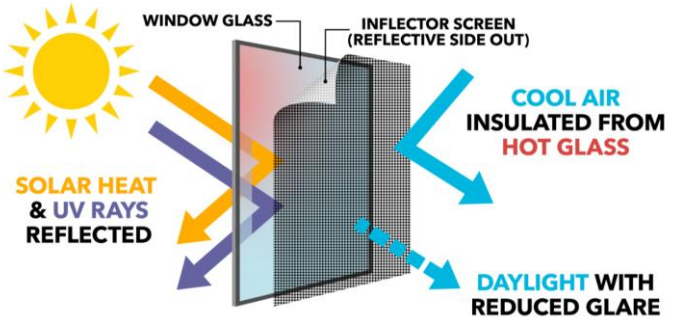
The Inflector solar window shades aid in stabilising indoor temperature allowing natural light in and reflecting back solar heat and UV rays. They can reduce air-conditioning costs by up to 40%

Reducing the overall ambient temperature of a building benefits flows through to reduced air conditioning costs, less air pollutants entering the conditioned space through the cooling systems, overall improvement of indoor air quality, reducing building related illnesses such as the Sick Building Syndrome, and increasing productivity

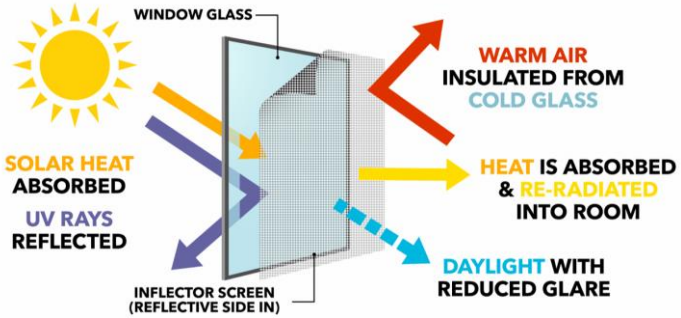
Images 10:00am - 17th of May 2016
Ambient Temperature 18.5°C
Glass temperature 48.9 °C
Difference 30.4 °C

North facing building –
Macquarie Park North Ryde NSW

In Summer



In Winter



Future – Waste / Water

Organic Food Waste Reduction Landfills

Water from Air Systems

Compounding Savings

Each of these technologies combined in a single application creates a larger energy saving overall, which better balances both the energy and heat loads of a building. An overall savings of 50% or more can be achieved by the use of multiple technologies.

Thermal Lag Reduction

Asterisk Coatings

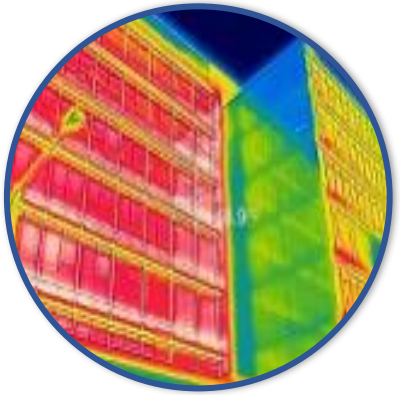
LED Lighting

TEKNIK LIGHTING SOLUTIONS

HVAC - Optimising & Coil Remediation

aeris ENVIRONMENTAL

Window Heat Gain Reduction

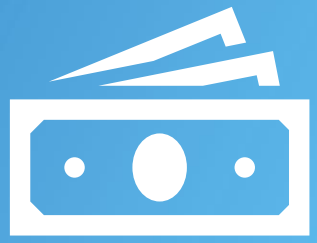


INFLECTOR

Overview

OGS is an initiative. We believe by creating an energy efficient and improved working environment we can deliver the right solutions with the right commercial outcomes.

ENERGY SAVINGS → **OPEX SAVINGS** → **IMPROVED ENVIRONMENT**



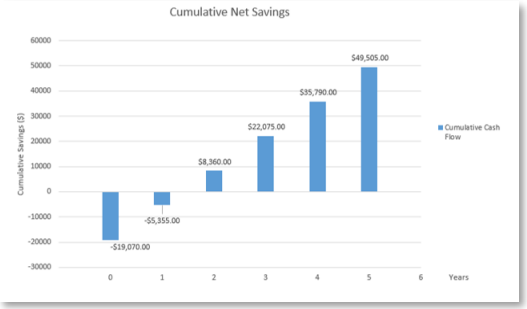
Analysis

What analysis gives you

- An analysis of existing consumption and your assets
- A detailed scope of works
- A payback period and Return on Investment
- The facts and figures you need to make a decision
- A “Business Case”

Part of project	Investment	Annual Savings	ROI	Payback period
Ensol – Solar	$54,666	$9,017	16%	5.67 years
Ensol - Lighting	$19,070	$13,715	72%	1.39 years
	$73,736	Total: $22,732	31%	3.24 years

OVERVIEW AND INVESTMENT SUMMARY – WITHOUT FINANCE	
Investment after ESCs	$19,070
Savings per year	$13,715
Return on investment	72%
Payback period	1.39 years



Area	Type	Wattage	Controls (Y/N)	Operating Hrs	Quantity	Description
Shop	Flouro 1200mm Troffer	2 x 36w	N	8.30-4.00	52	731 lux, retail area,
	Flouro 600mm batten	2 x 18w	N	8.30-4.00	2	
	Flouro 1200mm Batten	2 x 36w	N	8.30-4.00	5	
Warehouse (picking)	Flouro 1200mm batten	2 x 36w	N	8.30-4.00	36	236 lux,
Warehouse (storage)	Murcur vapour highbay	400w	N	8.30-4.00	12	100 lux, 2 highbay not needed 35m ceiling height, lots of skylights
Warehouse (loading area)	Flouro 1200mm Batten	2 x 36w	N	8.30-4.00	27	159 lux 5.2m ceiling height 4 not needed
Logistics office	Flouro 1200mm	2 x 36w	N	8.30-4.00	6	378 lux 2.5m ceiling height, may not need this many lights, room only 3.2 x 4.8m big
Warehouse toilet	Flouro 1200mm Batten	2 x 36w	N	8.30-4.00	2	
	Flouro 600mm Batten	2 x 18w	N	8.30-4.00	2	
Coolroom	Single par	?	Y	motion active	1	550 lux
Stairs/ entrance	Flouro 1200mm batten	2 x 36w	N	8.30-4.00	2	Customer requested to make this more warm, brighter and inviting
	Flouro 600mm Batten	2 x 18w	N	8.30-4.00	1	140 lux 5.1m ceiling height
Office (main)	Flouro 1200mm Troffer	2 x 36w	N	8.30-4.00	38	170 lux 2.5m ceiling height
Office (side 1)	Flouro 1200mm Troffer	2 x 36w	N	8.30-4.00	2	186 lux
Office (side 2)	Flouro 1200mm Troffer	2 x 36w	N	8.30-4.00	2	187 lux
Office (side 3)	Flouro 1200mm Troffer	2 x 36w	N	8.30-4.00	2	150 lux
Office (board)	Flouro 1200mm Troffer	2 x 36w	N	8.30-4.00	7	293 lux
Office (photocopy)	Flouro 1200mm Troffer	2 x 36w	N	8.30-4.00	1	200 lux
Office (kitchen)	Flouro 1200mm Troffer	2 x 36w	N	8.30-4.00	2	587 lux
Office (ladies)	Flouro 1200mm Batten	2 x 36w	N	8.30-4.00	3	

Workflow and warranties

OGS will give you a few weeks' notice of our work commencement date to fit in with your own company timelines and schedule although it is envisaged that our work will create little or no downtime in your business.

If you need to be open to the public during business hours we will work before you open each day and in some cases after you close if required.

When we come to your premises we will bring our "Safety Work Method Plan" and all contractors work under Government occupational health and safety guidelines

All contractors are insured for any accidents that either result in health related issues or damage to your stock or property

Products and workmanship are covered for 5 years from the date of installation.

Finance

Your upgrade can be self funded

Over the last 2-3 years, financial products have been created that make energy upgrades very simple.

Unlike bank finance which can be complex and restricting, there are solutions which:

- Do not require additional collateral
- Have simple checklists for approval
- Fall into Operating Expenses (“Op Ex”) rather than Capital Expenditure (“Cap Ex”)

Because the payback period of an energy efficiency upgrade is quite fast (often 1-3 years) then it works well as a financed solution

Self Funded

When your monthly savings will exceed the cost of the lease payment on the system.

Our Goals

Our clients can reduce their total energy spend by 45% on average

An OGS energy analysis will give you a clear path of action towards reducing costs. We examine a range of energy savings options including: lighting, lighting design, HVAC and solar power.

- Identifying existing consumption patterns
- Identify immediate opportunities for power reduction
- Advanced technologies with industry leading ROI
- Utilising cutting edge energy reduction technologies and practices
- Focus on commercial viability and maximized returns
- Analysis of future energy roadmap
- Reduce greenhouse gases
- Ensure all work is done to the highest standards taking into account the required workflow and all relevant OH&S

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Intelligent Energy+

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