



**GPS**  
**GREEN POWER  
SOLUTIONS**

EFFICIENT | RELIABLE | SUSTAINABLE

## Rental Solutions in Mobile Power & Light

# GPS

## GREEN POWER SOLUTIONS

EFFICIENT | RELIABLE | SUSTAINABLE

## Who are Green Power Solutions?

### The next generation of smarter, efficient, reliable and sustainable power and lighting

Green Power Solutions provides rental solutions, short or long term, of efficient, reliable and sustainable biodiesel power generator and lighting solutions to the construction industry, governments and businesses across Australia. As our name suggests, we do more than provide rental products – we like to solve problems.

Always striving to be ahead of change, we go beyond just being a rental solutions provider. We're providing environmental solutions for the short, medium and long term.

### Background is everything

A strong background in civil, mining and engineering, a commitment to innovation and research and more than 20 plus years of industry experience led to the formation of the Green Power Solutions team. Close and ongoing collaboration with manufacturers and research facilities benefits our customers as we create solutions that work. We're experienced in the market and fully equipped with the right background and industry expertise to help businesses achieve greater efficiency in their projects.

### Products

GPS produces Australia's cleanest and most reliable biodiesel powered generator and the most fuel efficient temporary power and lighting solutions. With premium fuel efficient equipment, we help project managers to supply the right product mix for the application.

We use a select group of engine manufacturers to keep product uniformity, in turn offering higher reliability. Together with our manufacturing partner Shindaiwa, we've placed more than 1,500 generators across Australia. Japanese manufactured Shindaiwa generators are world-renowned as being the premium product in this area, bringing you the ultimate in efficiency, reliability and sustainability.

With a growing demand for off grid energy solutions, GPS has introduced a range of Hybrid battery storage banks to manage site power loads and further reduce fuel consumption. Hybrid power systems using solar energy ensure, cleaner air, carbon reduction and considerable fuel savings can be made.

GPS offers a broad range of lighting products, customizing to suit any application, and covering every customers' needs. Combined with the latest innovations in LED, hybrid battery technology, and remote monitoring for mobile, fixed or portable lighting, we have solutions to satisfy civil, mining, film, festival and specialised events markets with a quick response on site.

GPS are proud members of:



ISCA



## Why Biodiesel?

### **Sustainability that works**

#### *Ethical feedstocks = renewable fuel*

Achieving sustainability creates many challenges, from establishing a comprehensive compliance strategy to integrating environmental objectives into your business operations. Then there's the constant balancing act of power efficiency and environmental impact against risk and cost reduction.

Green Power Solutions' biodiesel powered generators run on biofuels that meet Australian and international standards. We use 100 percent ethical feedstocks that make our fuels 100 percent renewable and 100 percent Australian made and owned.

Unlike diesel generators that can create 2.65kg of CO<sub>2</sub> for every litre of fuel consumed (even more if they're older or poorly tuned), biodiesel has a zero carbon footprint for generating all your site power needs. Further outcomes are fuel security, energy efficiency and up to 100% reduction in Life Cycle Assessment (LCA) carbon emissions.

Traditional diesel generators produce engine exhaust that has been classified by the International Agency for Research on Cancer (IARC) as carcinogenic in humans. The low-hazard air emissions from our biodiesel generators are not only good for the environment but for workers on the ground too.

Green Power Solutions supplies biodiesel powered generators in pristine condition, fully serviced and maintained by our team of experienced technicians and engineers. You also get generator performance reporting, a monthly Carbon Reduction Certificate (CRC) and full carbon management data to calculate how many tonnes of carbon emissions have been avoided.

We meet your environmental objectives by providing highly efficient, safe, cost-effective power generation to your site in any location, from 12kVA up to 500kVA and beyond.

## And Hybrid Power?

### **Hybrid power systems deliver cleaner air,**

#### *lower carbon emissions and a reduction in noise*

In much the same way as a hybrid car combines the use of a battery and an engine to deliver fuel efficiency and environmental benefits, hybrid power systems can combine, solar, a diesel generator with an energy storage system to achieve the same result.

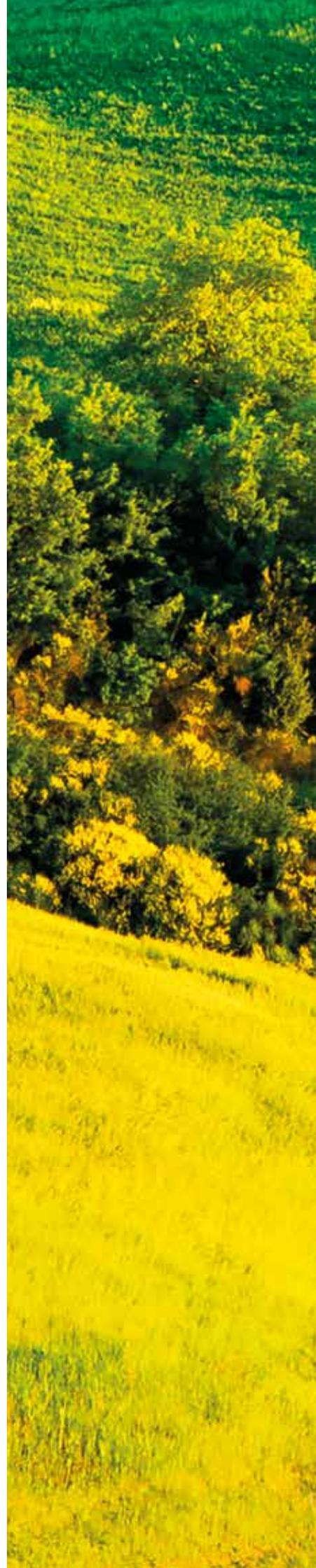
More often than not, incorrectly sized diesel generators are overrated for the job in hand and spend much of their time running but doing very little work. This results in poor fuel economy, under loading and unnecessarily high levels of pollution, carbon emissions and noise pollution.

The introduction of hybrid technology means that, when there is a low demand for power, the generator can be turned off so that just the battery supplies the power. When the battery runs low or demand for power increases then the generator is automatically started. This way, the generator only runs when absolutely necessary, and works efficiently when it does.

What is more, the battery can assist the generator during short bursts of high power demand, so a smaller generator can be used.

Adding sustainably sourced and 100% renewable biodiesel into the equation further improves environmental outcomes.

The result is a cleaner and more cost effective way of generating power with dramatically lower carbon and other hazardous emissions, a zero carbon footprint and less noise. Good for the environment, good for business and good for worker health. A win/win/win!





Our products are tailored for optimised efficiency, sustainability and increased reliability. We monitor everything to ensure the product is working as it should so you can get on with your project with peace of mind.

There's a GPS product that will suit your needs, help you reduce your costs and increase fuel efficiency.

Our solutions are designed with common goals, providing reliable power and maximizing system efficiency. To achieve these design goals, it is important to understand system operation, load profile and schemes, and implement scheduled maintenance for reliability.

### Civil

GPS generators play an important role in all kinds of civil engineering projects, powering lighting, air quality and other monitoring equipment, pumps, and site offices, all over the country. GPS bio-diesel and hybrid generators provide reliable power, and a GPS lighting solution will illuminate the darkest night, deepest trench or tunnel, ensure the health and safety of the people and assets involved in your project.

### Telecommunications

A brief power outage can be costly and affect lives, which is why a telecommunications backup generator is important for maintaining constant, reliable operations. Whether it's for voice, data, or cloud services, GPS power generators fill a key role for emergency services power, and are a cost-effective solution to meet remote power supply needs.

### Events

On-site power keeps the lights blazing, the music coming, the food hot, the champagne cold, and attendees cool at events across the country. From city parks to country race tracks, concerts in the middle of the bush, and location filming for film and television, GPS generators and lighting solutions keep the party going, and the work flowing, all day long, and all through the night, without disturbing a soul.

### Construction

On site, if the power stops, everything stops and costs start mounting up. GPS's rugged site-ready, compact, bio-diesel driven hybrid generators and light towers provide reliable power for all kinds of construction applications, to keep equipment operational, the lights on, and your crews working, no matter what the conditions.



# POWER

## Biodiesel Generators

GPS SuperSilenced Biodiesel Generators combine design simplicity with uncompromising standards of engineering and manufacturing excellence they are lightweight with a compact footprint. All engines meet current EPA emission standards. Durable all-weather outer enclosure with powder coated exterior and stainless steel fasteners throughout provide protection against corrosion.

- Super silenced operation (51dBA\*)
- 100% biodiesel compatible
- Hybrid compatible electronically controlled multiple source input/output
- Auto + remote start/stop and Data recording
- All sets are fully synchronisable
- GPS propriety technology



# POWER

## Hybrid Power Cube

The GPS Hybrid Power Cube is a portable power unit that is noise and emission free. Energy stored within the unit is converted electronically into mains power. The unit can be re-charged by connecting to a mains power supply or from a generator. It is also possible to connect solar PV or wind power to charge the unit. Input and output connectors can be configured to the customers requirement.

- Up to 30kVA, 240/415V, 50Hz Operation
- GSM Remote monitoring
- 100A passthrough capacity
- Automatic generator start/stop
- 7 day Programable timer
- Maintenance free
- Zero emissions, Zero noise
- Multiple recharge options



## What is biofuel?

The term biofuels encapsulates biodiesels, bioethanols, bioethers, biogas, syngas and all other types of fuel made from similar renewable resources.

Biofuels are an environmentally safe, sustainable, alternative fuel source, produced from renewable resources consisting of plant biomass, vegetable oils, treated municipal and industry waste. Biodiesel is made from vegetable oils (including canola oil), animal fats (tallow) and recycled greases.

The benefits of biodiesel are:

- Sustainability and Renewability
- Clean-burning
- Creates new jobs and opportunities
- Improves fuel security
- Provides cleaner air

Bioethanol and biodiesel are more commonly used in the mass fuel industry (transport), and that's where we come in.

### Biodiesel meets tough standards

To be certified as a fuel, biodiesel must be produced to meet national standards. The most generally accepted standards are the American ASTM 6751 and Europe's EN14214. To be legally recognised and registered as a fuel in Australia, all biodiesel must meet or exceed these standards.

### On balance, a better fuel

An energy balance ratio (EBR) compares the energy required to grow or extract, process and distribute a fuel as compared to the energy stored in that fuel.

Biodiesel can contain up to 2.5 to 3.5 units of energy for every unit of fossil energy input in its production. Compare these numbers with the EBRs for petroleum products (around 0.9 units), and suddenly biodiesel starts to look like a much better proposition.

### Cleaner emissions = less greenhouse gases

When biodiesel displaces petroleum, it significantly reduces greenhouse gas emissions. Biodiesel tailpipe emissions are substantially cleaner and safer than fossil diesel and petrol powered vehicle emissions. Burning biodiesel emits no sulphur dioxide, 78 percent less carbon dioxide and as much as 50 percent fewer smog producing compounds than conventional diesel and petrol. The US EPA's study of biodiesel emissions confirmed a 47 percent reduction in particulates and a 48 percent reduction in carbon monoxide when compared to fossil diesel emissions.



# LIGHT

## Mobile Light Towers

The GPS Light Tower is designed for intensive use, thanks to its power, compactness and new trailer mount design made to improve its mobility. With a height of up to 8.5m, the GPS Light Tower is one of the most powerful towers in the category, with 4900 m<sup>2</sup> of lighting. Compact dimensions make for easy site manoeuvrability and redeployment.

- Hydraulic lifting system with 355° mast rotation
- Low noise diesel generator (61 dBA@7m)
- 210 hours run time
- Bunded tank capacity 110%
- Registered for public roads use
- 4 x 350W adjustable LED lamps
- On-Off switch for each lamp
- Single-phase 240V 15A output



# LIGHT

## Surface Mount + Hybrid

Low or zero noise emissions and high efficiency make the GPS Surface Mount + Hybrid Light Tower ideal for long-term placement. Compact dimensions, and stability under lift, make for easy site placement and redeployment. The hybrid battery system (with diesel backup), and optional PV Panel attached, has 24 hour monitored\* operation covered. Ideally suited to environments where no noise or minimal exhaust emissions is critical.

- Hydraulic lifting system up to 8.5m, with 355 degree mast rotation
- 4 forklift pockets plus lift point
- Fully adjustable stabilizers
- Single-phase 240V 15A output
- On-Off switch for each lamp
- Remote monitoring capable
- Reduced transport footprint - up to 18 units per semi trailer
- 4 x 350W adjustable LED lamps - up to 4900 m<sup>2</sup> coverage



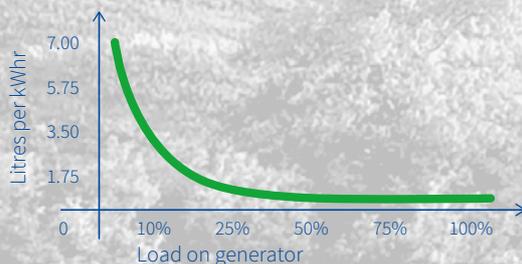
## Hybrid Power Generation

Save money, reduce maintenance, make less noise, all while gaining greater efficiency and cleaner air. Everybody wins.

### Saving fuel

There is a simple set of statistics behind hybrid power. As for any internal combustion engine, the diesel engine in a generator delivers poor fuel economy when lightly loaded compared to when it is working hard.

The graphic shows how a generator's fuel economy rapidly falls when working at low load. Up to four or five times more fuel is consumed to generate one kilowatt hour of energy at 10% load compared to working at 50% load or above. Because energy is rarely consumed at a continuous rate, many generators spend most of their time running at very low load.



In a hybrid system, the generator only runs when there is work to do. Charging the battery adds to the work, making it burn fuel efficiently. When there is less work to

do, the generator turns off and energy stored in the battery is used. Even accounting for energy conversion losses (called round trip efficiency) the result is less fuel consumed for the same amount of energy generated.

### Save fuel, save money

Every litre of fuel that is not burned represents a financial gain, and less fuel burned also means less frequent re-fuelling. Fewer running hours means that generator service intervals are less frequent too, saving cost, reducing road journeys and creating less waste oil & materials. In many cases savings can be significant. For example, take a typical construction site running a 100kVA generator 24/7. Using a hybrid system could save between 500 and 1000 litres of fuel a week.

### Save fuel, reduce carbon

CO<sub>2</sub> emissions are directly linked to fuel savings. Using the construction site example, and go for the middle, saving 750 litres of fuel equates to 1987.5 kg of CO<sub>2</sub> saved per week. That's the equivalent of taking more than 52 cars off the road!

### Better combustion means cleaner air

A generator running under light load (underloading) doesn't operate within optimum conditions, and this results in poor combustion. Poor combustion means that more pollution is created, for the same amount of energy generated, compared to when a generator works hard. Hybrid power systems make the generator work harder, then turn it off, and so create much less pollution.

# LIGHT

LinkLite

Lighting long stretches of road, rail track or tunnel is now easier and more efficient than ever with the GPS Linklite LED temporary lighting system. Linklite is designed to be daisy chained to illuminate long distances - it's possible to floodlight in excess of half a kilometre using less than 2kW of generated power. Compared to a standard 4000W light tower, a string of Linklites will light the same distance for less than one fifth of the running cost.

- Powered from a single source
- Power will continue to flow in event of a lamp failure in the series
- 2kVA will run up to 50 lamps
- Easy storage when disassembled
- Compact and easy to transport
- Easy and fast to erect



# STORAGE

Fuel Storage Solutions

When it comes to storing fuel safely and efficiently, the GPS range of self-bunded stationary or diesel tanks are ideal. Perfect when combined with multiple generator applications or for onsite fuelling (with the option of metered electric hand pumps). GPS tanks are strong, secure, flexible, easy to move and environmentally compliant. Let GPS manage your site fuelling requirements when renting our extensive range of biodiesel generators or lighting solutions.

- 950 to 6,300 litres
- Heavy duty construction
- Portable
- Self-bunded tank capacity 110% of internal tank volume
- Pumps/connections/hoses/meters/filters housed in bund, which can be locked even when in use



Large generators are often operated under load bank conditions (termed "banking") where an entirely pointless load that burns electrical energy off into the atmosphere as heat, to make the generator work harder and stop the engine sooting up! Hybrid systems load the generator to charge the battery then turn it off and use the energy stored.

### Reduce noise

Generators are often described as "silent" or "super silent". Battery storage systems make **no noise at all**.

It's often the case that power is needed in noise sensitive locations such as a residential area where night-time noise would be an issue. Hybrid power systems can be specifically programmed so that running the generator at designated times can be avoided altogether.

### An engery mix that works

Diesel generators and solar energy generally don't mix well. Add battery storage, however, and it's another story. Battery storage systems provide a more stable output than a generator and so energy generated by renewables can connect and contribute to saving use of the battery. Where solar PV is over producing, this excess energy can be stored in the battery for later use and further reduce generator running times and, in some cases, eliminate the need for a generator altogether.

We've invested a lot of time and resources into producing Australia's cleanest and most reliable biodiesel powered equipment. Our readiness to be curious, to continue our journey of discovery, means the most up-to-date and forward-thinking sustainable energy solutions are at the core of what we do.

We never stop in our quest to find and develop greener and more efficient energy solutions.

# Keeping the power on line

## Onsite generator maintenance, service & repair

GPS offers a range of maintenance programs to keep your generators or mobile light towers up and running. Whether you require 24/7 servicing or standard preventative maintenance completed, we have your needs covered.

Our goal is to ensure that you're confident that your equipment is always ready for action, so we offer tailored monthly, quarterly or yearly service plans to best suit your application and needs.



Beyond our routine maintenance programs, we work at identifying how we can improve your productivity and profitability. Our specialist service technicians can keep your equipment running at maximum efficiency and lowest cost with electrical, mechanical and control system upgrades. These improvements can be retrofitted to existing units to extend their useful life.

With customers ranging from small independent businesses with a single power generator, through to critical installations in hospitals and telecommunications installations across the country, our expert service team will ensure there's no interruption to your work. We understand that every minute of downtime costs money. We can even help you evaluate, monitor, and manage your system to ensure your demand requirements are optimized for cost efficiency.

- **Monthly, quarterly or annual maintenance programs tailored to suit your specific operating requirements.**
- **Our continuous improvement approach identifies how we can improve your productivity and profitability.**
- **Dedicated 24-hour emergency phone support line for emergency repairs.**
- **A highly qualified fleet of field service technicians to assist you with all of your needs.**
- **Electrical, mechanical and control system upgrades that help your power systems deliver maximum efficiency and the lowest cost.**

## The importance of maintenance to your business

How important is keeping the power and lights on to your business? What production processes would stop if your power failed? For many companies, the cost of lost production and downtime over just a few hours will often exceed the total purchase price of a backup generator. And, keeping that generator running efficiently, through correct and timely service and maintenance, will save you tens of thousands of dollars every year.

Contact us today to discuss your maintenance requirements, whether onsite or in our comprehensively equipped workshop, and how GPS can save you time and money.

# GPS

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