

POWAPACS<sup>®</sup>

*Power Your Adventure*

INNOVATION BROCHURE







"Green energy is the key to a sustainable and cleaner future."



At Powapacs, our journey is driven by an unwavering commitment to sustainability and environmental responsibility. We stand as a beacon of change in the energy industry, dedicated to reducing CO2 emissions and crafting green products in partnership with businesses that share our vision of a greener, more sustainable future.

### Our Vision:

We envision a world where eco-consciousness is deeply ingrained in every facet of business and daily life. Our ultimate goal is to play a pivotal role in ushering in this new era of environmental stewardship, where sustainable practices are the norm rather than the exception.

### Our Approach:

#### 1. Green Energy Solutions:

At Powapacs, we understand that the transition to a sustainable future begins with cleaner energy sources. Our core mission revolves around harnessing the power of renewable energy technologies such as solar, wind, and hydroelectric power to significantly reduce CO2 emissions. We develop and deploy innovative solutions that allow businesses to shift away from fossil fuels and embrace cleaner, greener energy alternatives.

#### 2. Collaborative Innovation:

We firmly believe in the power of collaboration. To accelerate the journey towards sustainability, we partner with like-minded businesses to co-create green products and technologies. Together, we pioneer solutions that not only reduce environmental impact but also drive business growth. By forging strong partnerships, we amplify our collective impact and foster a sense of shared responsibility for the planet.

#### 3. Sustainable Product Development:

In addition to our commitment to green energy, we invest heavily in the research and development of sustainable products. Our portfolio includes a range of eco-friendly solutions designed to meet the evolving needs of our partners and clients. These products not only reduce carbon footprints but also provide economic benefits, contributing to a more sustainable and profitable future.

#### 4. Environmental Advocacy:

We recognize that change goes beyond technological innovation. Powapacs actively engages in environmental advocacy, promoting sustainable practices, and raising awareness about the urgent need for carbon reduction. We are dedicated to influencing positive change on a global scale through education, collaboration, and advocacy efforts.

#### 5. A Greener Tomorrow:

Our commitment to reducing CO2 emissions and developing green products is not just a business objective—it's a moral imperative. We are dedicated to ensuring that our clients and partners not only meet their sustainability goals but also thrive in a rapidly evolving green economy.

### Join Us in Pioneering Sustainability:

By choosing Powapacs, you are choosing a partner that shares your passion for environmental responsibility. Together, we can lead the way in reducing CO2 emissions, developing sustainable products, and forging a brighter, cleaner future for all. Join us in redefining the future of energy and sustainability, one innovative solution at a time. Together, we can make a profound impact on our planet and create a legacy of sustainable growth for generations to come.



# Leading the Way to Carbon Reduction Through Technology and Advisory Services

At Powapacs, we are passionately committed to ushering in a sustainable and eco-conscious future. Our mission is clear: to significantly reduce CO2 emissions and support companies in achieving their carbon reduction goals through a combination of cutting-edge technology and expert advisory services.

## Our Vision:

We envision a world where environmental responsibility is at the forefront of every business strategy. Our ultimate goal is to help pave the way for a greener, cleaner planet for current and future generations.

## Our Approach:

### 1. Technological Innovation:

At Powapacs, we understand that technology plays a pivotal role in achieving carbon reduction objectives. Our team of experts is at the forefront of developing and implementing innovative, sustainable solutions that empower businesses to make significant strides towards reducing their carbon footprint. Whether it's optimizing energy usage, implementing renewable energy solutions, or utilizing data analytics to identify efficiency improvements, our technological solutions are tailored to each client's unique needs.

### 2. Expert Advisory Services:

We recognize that no two companies are alike, and carbon reduction strategies must be tailored to individual circumstances. Our team of experienced advisors work closely with our clients to create bespoke roadmaps for achieving their carbon reduction goals. We provide actionable insights, regulatory guidance, and best practices to ensure that our clients not only meet but exceed their environmental targets.

### 3. Sustainable Partnerships:

Powapacs believes in the power of collaboration. We actively seek partnerships with industry leaders, environmental organisations, and governmental bodies to create a united front in the fight against climate change. By fostering these relationships, we can amplify our impact and drive meaningful change on a global scale.

## Our Commitment:

Reducing carbon emissions is not just a responsibility; it's an opportunity. Powapacs is dedicated to ensuring that our clients not only meet regulatory requirements but also gain a competitive advantage by embracing sustainability. We are steadfast in our commitment to providing the tools, knowledge, and support needed to make this transition seamless and rewarding.

By choosing Powapacs, you're choosing a partner who is as passionate about your carbon reduction goals as you are. Together, we can transform today's businesses into the sustainable leaders of tomorrow, forging a brighter, cleaner future for all.

*Chris Nicholls*

Chris Nicholls, Managing Director



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## NANO vs BESS

Nano grids and Battery Energy Storage Systems (BESS) are both integral components of modern energy solutions, but they serve different purposes and have distinct characteristics. Here are the key differences between nano grids and BESS:

### Scope and Scale:

#### Nano Grids:

Nano grids are localised and small-scale energy distribution systems that can serve a specific area, building, or community. They often include a combination of energy sources, energy storage, and smart grid management to meet localised energy needs.

#### BESS:

Battery Energy Storage Systems refer specifically to the storage component of an energy system. BESS can be part of various energy setups, including nano grids, but they are not limited to nano grid applications. BESS can range from small residential units to large utility-scale systems.



Nano grids, also known as microgrids, represent a transformative approach to energy distribution. These localised and compact energy systems offer a multitude of advantages, making them a promising solution for a sustainable energy future.

**Resilience:**

Nano grids are inherently resilient and capable of operating independently or seamlessly reconnecting to the main grid during outages. This reliability ensures uninterrupted power supply, particularly critical in remote or off-grid areas.

**Reduced Carbon Footprint:**

Nano grids leverage renewable energy sources like solar and wind, significantly reducing CO2 emissions and promoting environmental sustainability.

**Energy Independence:**

By generating power on-site or nearby, nano grids reduce reliance on centralised power plants and long-distance transmission lines, promoting energy self-sufficiency.

**Efficiency:**

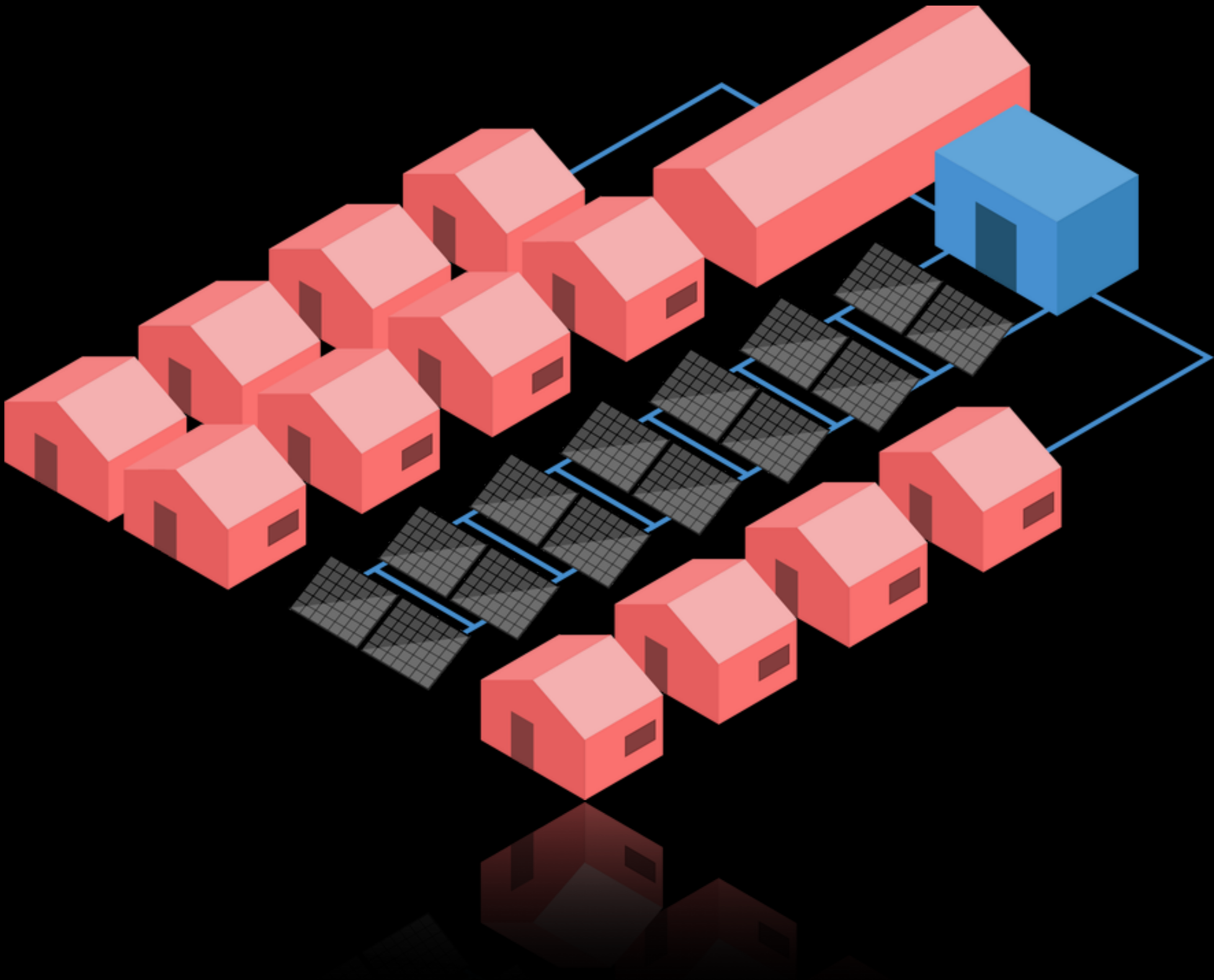
Smart energy management systems optimise energy distribution, minimise losses, and improve overall energy efficiency within the grid.

**Customisation:**

Nano grids are adaptable to various settings, from residential areas to industrial complexes, allowing for tailored solutions to meet specific energy needs.



- **Grid Stability:**
- Energy storage systems, often part of nano grids, provide grid stability by storing excess energy during peak production for use during high-demand periods.
- **Cost Savings:**
- Reduced transmission costs, improved energy efficiency, and potential revenue generation from excess energy production contribute to cost savings for both consumers and utilities.
- **Environmental Impact:**
- Nano grids promote a cleaner environment by reducing the need for fossil fuels and promoting the adoption of renewable energy sources.
- **Empowerment:**
- Nano grids empower communities and businesses to take control of their energy production and consumption, fostering a sense of environmental responsibility.
- **Innovation:**
- Advancements in nano grid technology continue to drive innovation in the energy sector, offering new opportunities for sustainable energy solutions.



CODE	DESCRIPTION	WEIGHT	RRP
PPN001	NANO GRID	N/A	POA



Battery Energy Storage Systems (BESS) have revolutionised the way we manage and store electrical energy. These innovative systems play a pivotal role in modernising our grid infrastructure and ensuring a sustainable energy future.

**Energy Reliability:**

BESS provides a stable and consistent power supply, reducing the risk of blackouts and ensuring uninterrupted electricity during peak demand or emergencies.

**Renewable Energy Integration:**

BESS stores excess energy generated from renewable sources like solar and wind, allowing for efficient use when the sun isn't shining or the wind isn't blowing.

**Load Shifting:**

BESS enables load shifting, allowing consumers to use stored energy during periods of high electricity costs and reducing their reliance on grid electricity during peak hours.

**Grid Support:**

BESS can act as grid stabilisers by providing ancillary services such as frequency regulation, voltage control, and seamless integration of distributed energy resources.

**Environmental Benefits:**

By facilitating the integration of renewable energy sources, BESS reduces reliance on fossil fuels, curbing greenhouse gas emissions and contributing to a cleaner environment.



# BATTERY ENERGY STORAGE SYSTEM

- **Peak Demand Management:**  
BESS can shave off-peak demand, reducing the need for costly infrastructure upgrades and enhancing grid efficiency.
- **Energy Independence:**  
BESS allows for increased energy self-sufficiency, reducing dependence on external energy sources and providing resilience in case of power outages.
- **Scalability:**  
BESS systems can be scaled up or down to meet the specific energy needs of various applications, from residential homes to large-scale industrial facilities.
- **Grid Decentralization:**  
BESS supports the trend towards decentralised energy production and consumption, empowering communities and individuals to take control of their energy.
- **Long Lifespan:**  
Modern battery technologies offer a long lifespan with minimal maintenance, ensuring a reliable and cost-effective energy storage solution.
- **Innovation:**  
Continuous research and development in BESS technologies drive innovation, making these systems more efficient, affordable, and accessible to a wider range of users.



CODE	DESCRIPTION	WEIGHT	RRP
PPBS001	BESS	N/A	POA



### Store energy, save money

#### Reduce your electricity bills

Powapacs Powavault's modular design stores your surplus solar power and low-cost electricity from the grid, supplying your home more cost-effectively. Powapacs Powavault's intelligent software is compatible with all Time-of-Use electricity tariffs, including Octopus Agile, so users with or without solar can benefit from lower bills.

#### Help get to net zero

Worldwide, we must all get to 'Net Zero' carbon emissions by 2050, and your journey starts with Powapacs Powavault. We can't control when the sun shines or wind blows, so energy storage is the key to unlocking 100% clean energy. By choosing Powapacs Powavault you are helping pioneer the sustainable energy transition from your home.





Protect our environment

Reduce your carbon footprint

By storing solar electricity during the day and low-cost electricity overnight, Powavault shifts your energy usage to times of day when carbon emissions are lower. This reduces the climate impact of the power you use and helps alleviate the UK’s dependence on creaking old fossil fuel infrastructure.

Support the grid

Working closely with energy suppliers, DNOs and National Grid, Powavault provides flexibility and in turn, helps to decarbonise the network. By intelligently ‘turning up’ or ‘turning down’ home energy usage we can help balance the grid and make the most of renewable generation.



CODE	DESCRIPTION	WEIGHT	RRP
PPV001	Home energy storage	>40Kg	POA



Experience freedom and safety like never before with the portable HSR generator from Powapacs. Designed to thrive in rugged and harsh conditions, this portable power station is the ultimate choice for military operations, life-saving equipment, and anyone who demands unwavering performance in the face of the unexpected.

### Unmatched Power:

With a continuous power output of 4000 W and a peak power of 8000 W, this generator is a powerhouse in a compact form. It's not just about charging your mobile phone or laptop; it's capable of keeping your drone soaring high. Plus, with its versatile 100 - 240 V input voltage range, this power station functions seamlessly across the globe. It ensures your devices remain operational during power outages and critical emergencies, making it the ideal companion for demanding situations, road trips, or as a dependable backup generator at home, in the office, or workshop.

### Pure Sine Waves for Precision:

The HSR power station generates pure sine waves, ensuring compatibility with even the most sensitive electronic devices found in medical environments and laboratories. Unparalleled Capacity:

With a massive 3.8kWh capacity at 150Ah, this portable power station transforms into a mobile power plant, offering quiet and emission-free electricity, unlike noisy petrol generators.

### Multi-Device Connectivity:

Equipped with four USB ports, one USB Type-C port, and four 230 V sockets, it effortlessly powers multiple devices simultaneously.

### Versatile Charging:

You can recharge the unit using a solar panel (18 - 70 V / up to 600W, (solar panel not included), a car's cigarette lighter, or a standard power socket.



Robust and Reliable

User-Friendly Interface:  
The LCD display keeps you informed about the current charging status and all relevant parameters, ensuring ease of use.

Safe and Eco-Friendly:  
The maintenance-free lithium iron phosphate battery is both secure and environmentally conscious. Advanced Protection: Intelligent overloading and under-loading management safeguards against short circuits, current surges, low currents, overloading, and overheating, enhancing safety.

Durable Construction:  
Encased in rugged polycarbonate housing, this power station is built to withstand the harshest conditions, reliably protecting its inner workings.

Smart Monitoring and Control

Mobile App:  
The generator includes a user-friendly mobile app that provides real-time monitoring of power usage and CO2 savings.

Remote Operation:  
Operate device outputs remotely via the app, giving you unparalleled control over your power supply.



CODE	DESCRIPTION	WEIGHT	CUSTOM BUILD
PP031	HSR Power Unit	55Kg	POA



## Unleash Dual Power: Wind and Solar Combined

Imagine a renewable energy system that capitalises on the relentless energy of the wind and the abundant sunshine, all in one. Our hybrid module seamlessly integrates both wind turbines and solar panels into a single, sleek design. It's the ultimate synergy of nature's forces, working together to provide you with a continuous and reliable source of clean energy.

## Why Choose the Wind and Solar Module Hybrid?

### Maximum Energy Production:

By combining wind and solar technologies, our hybrid module ensures that you capture energy day and night, rain or shine. Say goodbye to downtime and hello to consistent power generation.

### Space-Efficient:

Save valuable space by having two renewable energy sources in one compact unit. Whether you're installing it on your rooftop, in a remote location, or at your business premises, our hybrid module makes the most of every inch.

### Eco-Friendly:

Reduce your carbon footprint and contribute to a greener planet. Harnessing wind and solar energy is not only sustainable but also helps combat climate change and reduce reliance on fossil fuels.





- Reliability:

Our hybrid module is engineered for durability and performance. It's designed to withstand challenging weather conditions and deliver dependable energy for years to come.
- Versatility:

It's versatile enough to suit various applications, from residential homes and farms to industrial complexes and remote off-grid locations. No matter your energy needs, this hybrid module has you covered.
- Smart Integration:

Benefit from advanced monitoring and control systems to optimise energy production and ensure efficiency. Keep track of your energy generation in real-time and make informed decisions

Join the Renewable Energy Revolution Today

Embrace the power of wind and solar working in harmony, providing you with clean, sustainable, and reliable energy. Be a part of the renewable energy revolution. Upgrade your energy source and make a positive impact on the environment and your bottom line.



CODE	DESCRIPTION	WEIGHT	CUSTOM BUILD
PPPV001	WIND SOLAR MODULE	>50Kg	POA



A 600W portable solar panel system is a versatile and efficient solution for harnessing solar energy on the go.

### Power Independence:

A 600W portable solar panel system allows you to generate your electricity wherever you are. Whether you're camping, travelling in an RV, or facing a power outage at home, it provides a reliable source of energy, reducing your dependence on traditional grid power.

### Clean and Renewable:

Solar energy is one of the cleanest and most renewable sources of power available. By using a portable solar panel system, you contribute to a reduction in greenhouse gas emissions and decrease your carbon footprint, promoting a more sustainable lifestyle.

### Versatility:

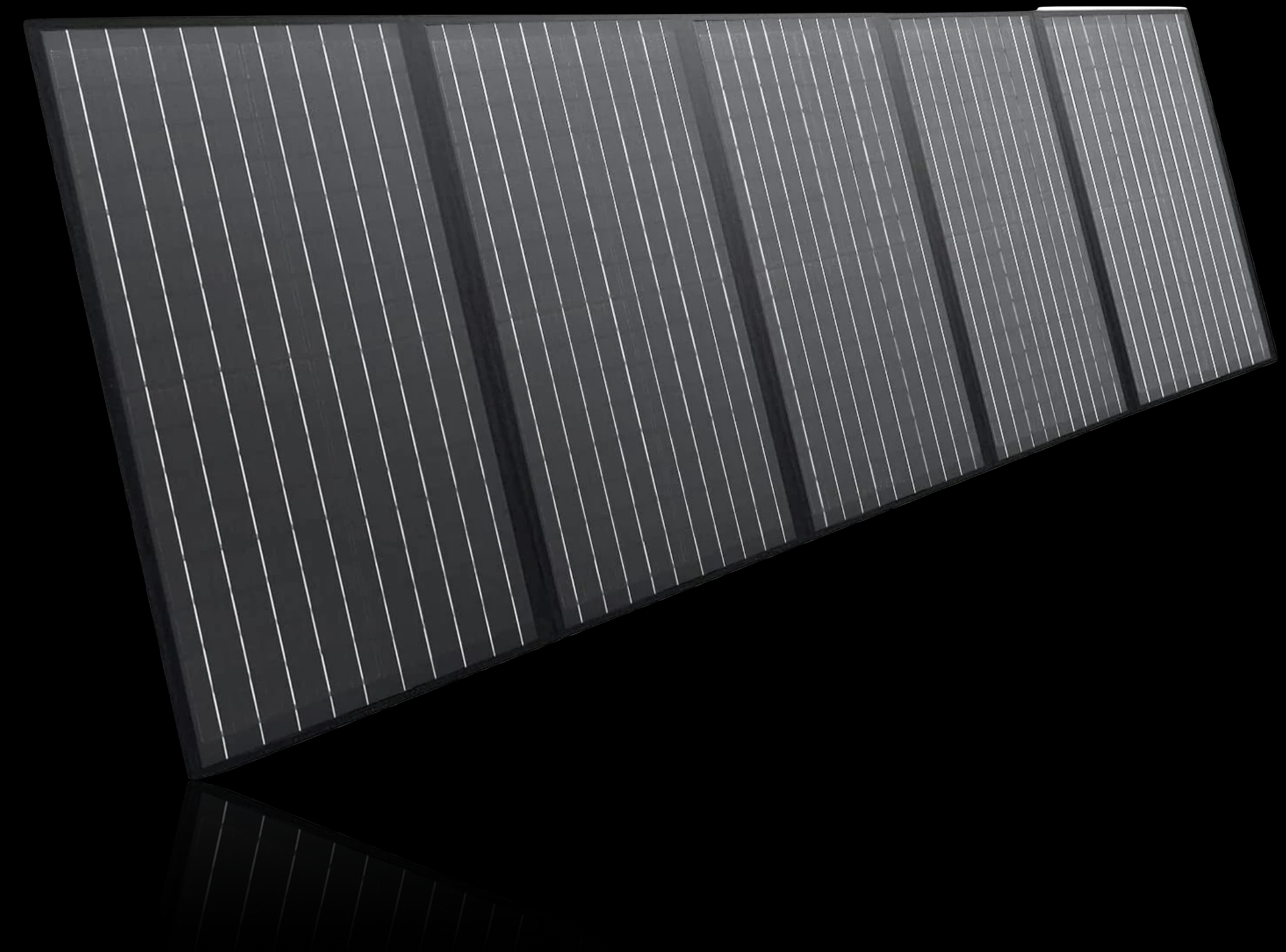
These systems come equipped with various output options, including USB ports and DC connectors. This versatility means you can charge a wide range of devices, from smartphones and laptops to camping equipment and power banks.

### Portability:

The foldable and lightweight design of a 600W portable solar panel system makes it easy to transport and set up. You can position the panels in direct sunlight quickly, whether you're in a remote wilderness or your own backyard.

### Off-Grid Capability:

For outdoor enthusiasts and adventurers, a portable solar panel system provides off-grid capabilities. You can keep your devices charged, power camping equipment, or even maintain communication during emergencies without access to conventional power sources.





# 600W PORTABLE SOLAR PV

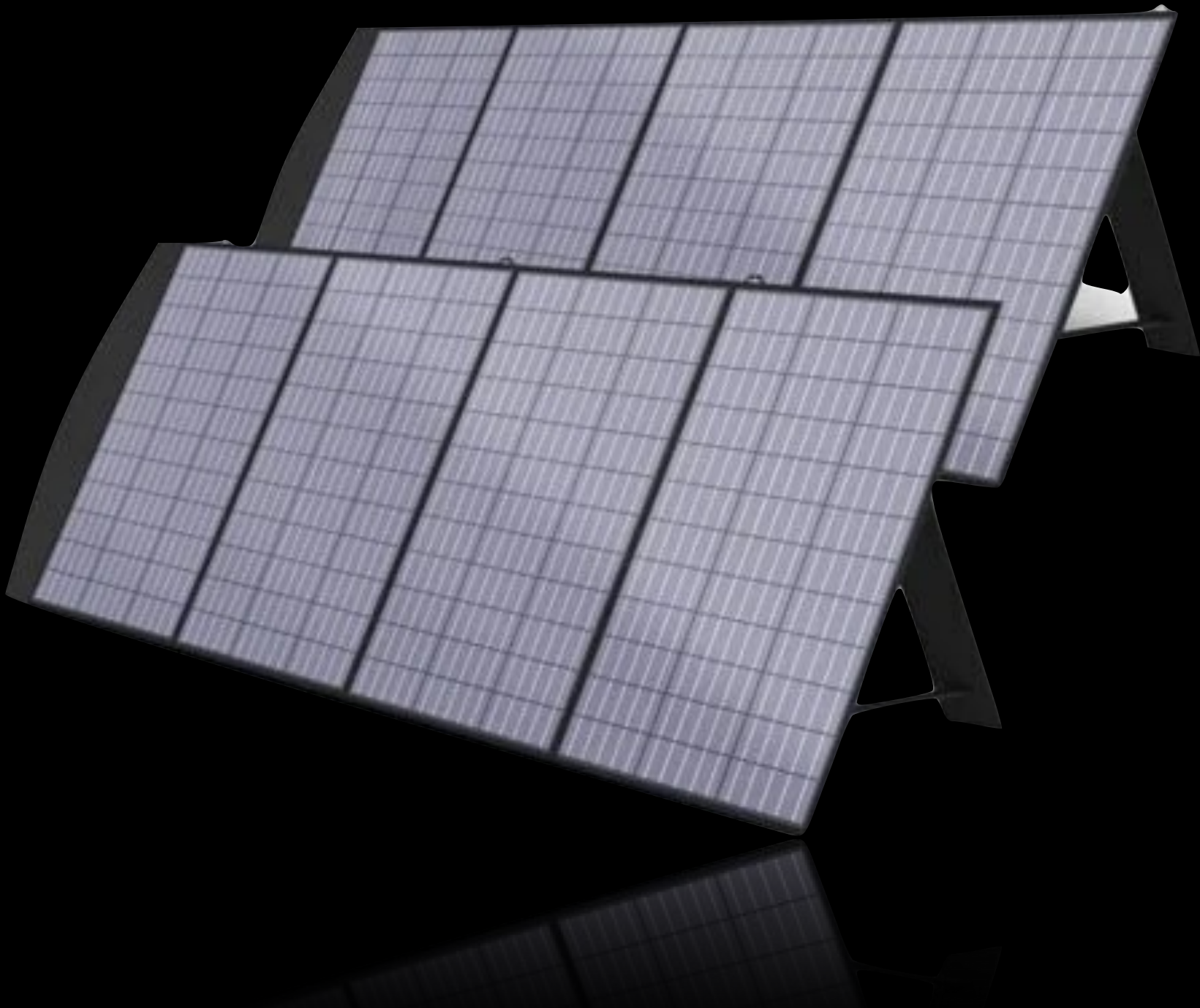
**Silent Operation:**  
Unlike noisy generators, portable solar panels operate silently. This feature ensures that you enjoy peace and quiet during your outdoor activities, and it won't disturb your surroundings.

**Durability:**  
These systems are typically built to withstand the demands of outdoor use. They are designed with high-quality materials that resist water, dust, and impact, ensuring durability and longevity.

**Cost Savings:**  
By reducing your reliance on traditional grid power, a portable solar panel system can help you save on energy costs in the long run. It's a smart investment for those looking to lower their electricity bills and increase their energy independence.

**Eco-Friendly:**  
Solar energy is an environmentally friendly power source that produces no harmful emissions or pollution. Choosing solar power helps protect the environment and supports a more sustainable future.

**Easy Setup:**  
No specialised technical expertise is required to set up a portable solar panel system. It's a straightforward, plug-and-play solution that allows you to start generating clean energy quickly.



CODE	DESCRIPTION	WEIGHT	RRP
PP029	600W SOLAR	17.5g	POA



Powapacs Portable lights like the Tower Lite (TL) 400 offer several compelling advantages, making them a wise investment for a wide range of applications. Here's why they are a good idea and why you might need them:

### Emergency Preparedness:

Portable lights are essential for emergency preparedness. During power outages caused by storms, natural disasters, or other unforeseen events, these lights provide a reliable source of illumination, ensuring safety and visibility in critical situations.

### Outdoor Adventures:

If you enjoy outdoor activities such as camping, hiking, or fishing, portable lights are a must-have. They light up your campsite, provide visibility on trails, and enhance your overall outdoor experience. The TL-400's adaptability and long battery life make it ideal for extended outdoor trips.

### Construction and Work Sites:

For professionals working in construction, maintenance, or other industries, portable lights are indispensable. They ensure that work can continue safely and efficiently, even in low-light conditions or remote locations.

### DIY Projects:

Whether you're working on DIY projects at home or need extra lighting for repairs, a portable light tower like the TL-400 can provide the necessary brightness and versatility to get the job done effectively.





- Events and Outdoor Gatherings:

Hosting outdoor events or gatherings in the evening requires adequate lighting. Portable light towers offer a convenient solution to illuminate your event space, ensuring the safety and enjoyment of your guests.
- Off-Grid Living:

If you live off the grid or in a remote area without access to traditional electricity sources, portable solar-powered lights like the TL-400 provide a sustainable and reliable lighting solution.
- Energy Efficiency:

Portable solar lights are energy-efficient and eco-friendly. They harness the power of the sun to generate electricity, reducing your reliance on fossil fuels and lowering your carbon footprint.
- Versatility:

Portable lights can be used in various situations and environments, providing versatile and adaptable solutions for your lighting needs.
- Ease of Use:

Many portable lights, including the TL-400, are designed for user-friendliness. They are easy to set up, operate, and maintain, making them accessible to a wide range of users.
- Safety:

Portable lights enhance safety in low-light or dark conditions, reducing the risk of accidents, tripping, or injuries.



CODE	DESCRIPTION	WEIGHT	RRP
PPPL001-0010	Portable Lights	>2Kg	POA



At Powapacs we specialise in providing tailored green energy solutions for a wide range of projects. From residential and commercial ventures to large-scale industrial initiatives, our expertise in crafting bespoke solutions ensures that every project receives the energy solutions it deserves. Additionally, we offer comprehensive consulting services, guiding clients through the intricacies of energy projects to make informed decisions.

**Customization:**

Powapacs green energy solutions are meticulously crafted to meet the unique requirements of each project, ensuring maximum efficiency and sustainability.

**Cost Efficiency:**

Through professional consulting, we help clients identify cost-effective strategies and technologies, optimising energy investments and reducing long-term expenses.

**Environmental Responsibility:**

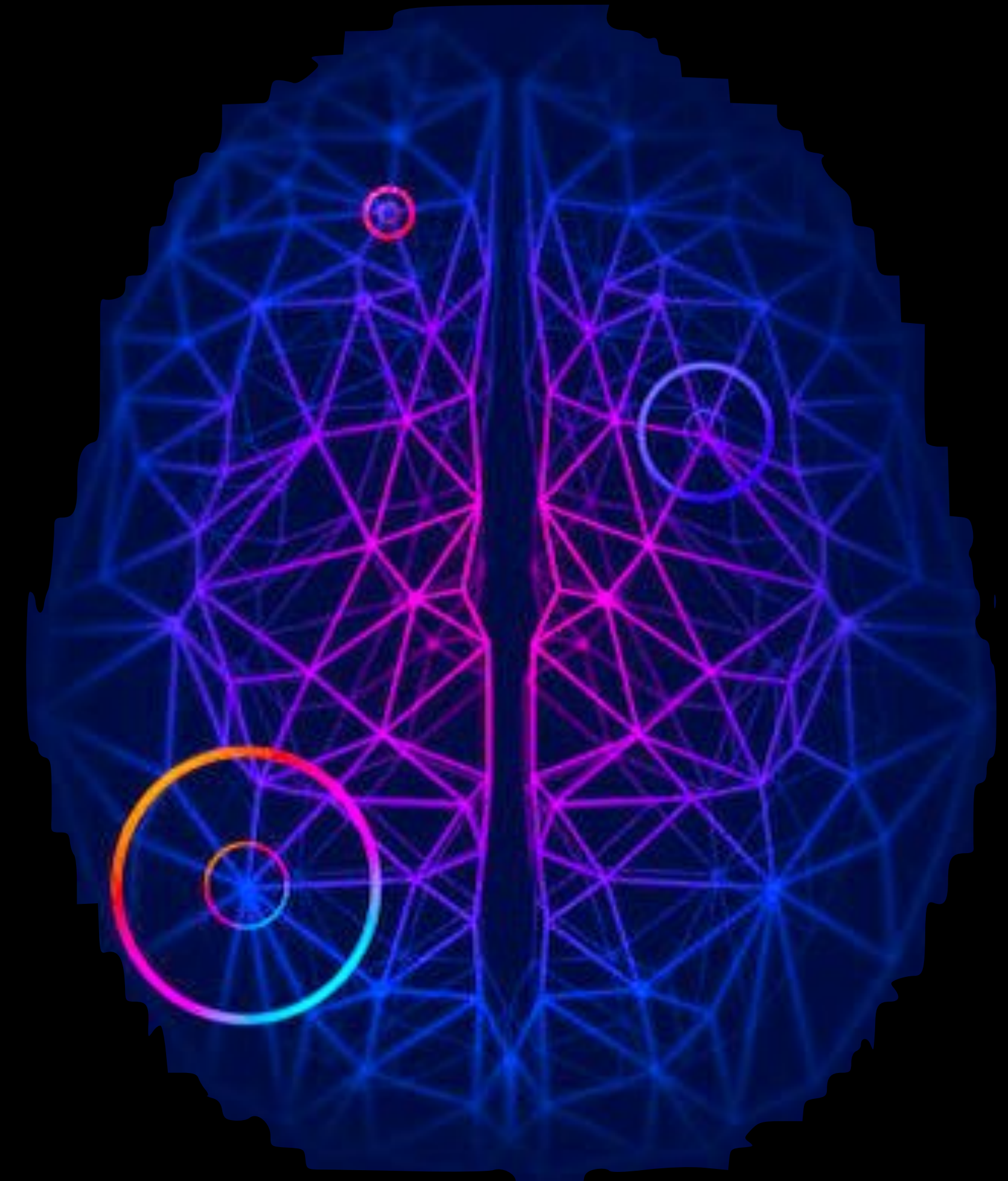
Our solutions prioritize the use of renewable energy sources, minimizing carbon emissions and contributing to a greener, more sustainable world.

**Energy Independence:**

By harnessing green energy, clients reduce their dependence on traditional fossil fuels and grid power, ensuring a more resilient and self-sufficient energy future.

**Expert Guidance:**

Our experienced consultants offer valuable insights and recommendations, guiding clients through the complex landscape of energy projects and helping them make informed decisions that align with their goals and values.





# POWAPACS<sup>®</sup>

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Powapacs Ltd  
Unit 8B Brydges Court  
Castledown Business Park  
Ludgershall  
SP11 9FT

[info@powapacs.co.uk](mailto:info@powapacs.co.uk)  
[www.powapacs.co.uk](http://www.powapacs.co.uk)

Company Registered in England No 10852900  
VAT Registration No 288 7950 30

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