

VOLTSSMART®

**Managing Energy
Efficiency**



**Introducing the world's first renewable
distribution board**



Key Sections

01 About Us

02 The Problem

03 The Solution

04 How it Works

05 The Product

06 Fire Safety Features

07 Renewable Synergy

08 Voltsmart International



ABOUT US

Introducing the world's first renewable distribution board

Voltsmart began its journey in 2019 after identifying installation issues with home voltage optimisation. Through a strategic partnership with the market leader in voltage optimisation, we have developed the world's first renewable distribution board, also widely known as: a fuse box, fuse board or consumer unit. Our innovation was granted a patent in 2023.

Voltsmart provides homeowners with a cost effective and easy-to-install solution that reduces your energy bills, reduces your carbon footprint and reduces the risk of an electrical fire starting within your home.

Quality Products

All products are manufactured in the UK and reinforced by the 'Made In Sheffield' mark of quality & excellence.

All manufactured under comprehensive ISO9001:2015 Quality and ISO14001:2015 Environmental Standards.



THE PROBLEM



European legislation was introduced in 1993 to standardise the supply voltage across Europe in order to provide two major benefits. It allowed electricity to be generated and supplied from one country to another and it allowed electrical equipment manufacturers to design one appliance that could be used throughout Europe.

However, a challenge emerged as our appliances were tested at the European voltage of 220-230v, while the UK's average voltage stands at 242v. This discrepancy led to residential and commercial premises receiving an oversupply of voltage and subsequently, higher charges for electricity consumption.

Overvoltage

Overvoltage affects 99% of UK households, regardless of size and occurs as a result of a property being supplied with higher voltage than necessary. Overvoltage leads to increased energy consumption, increased CO₂ emissions, reduced appliance lifespan and puts the National Grid under unnecessary strain. It's crucial we address overvoltage.

Carbon emissions

The problem with carbon emissions caused by overvoltage is that it is environmentally inefficient. Overvoltage causes us to use more energy which leads to higher carbon emissions. This inefficiency in our electrical systems adds to environmental problems by promoting unnecessary energy waste and a larger carbon footprint.

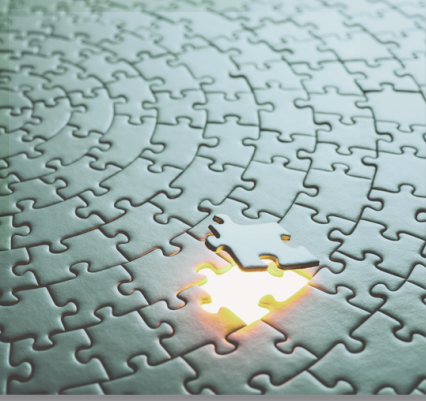
Rising Energy Costs

In the past 18 months domestic electricity prices have risen by 122%. The transition away from fossil fuels to all-electric homes, will create higher demand for electricity at a time where costs are predicted to continue to rise. Overvoltage adds to the burden of high electricity bills and creates unnecessary financial pressure on households.

We will

- Reduce your energy consumption
- Reduce your carbon emissions
- Reduce your electricity bills

THE SOLUTION



Voltsmart provides a practical and scalable solution to regulate voltage in UK homes, alleviating strain on the national grid and promoting a more sustainable energy future.

It offers an all-in-one solution to the long-standing issue of increasing voltage in our electrical infrastructure, which has not been effectively addressed by government efforts.

Overvoltage

Voltsmart's advanced voltage regulation solution maintains optimum voltage levels in homes which; prevents overvoltage, reduces energy waste and relieves strain on the national grid. It also helps to extend the lifespan of electrical appliances, therefore reducing the number of prematurely degraded appliances that end up in landfill.

Carbon Emissions

Voltsmart's voltage optimisation technology enhances energy efficiency, reduces harmful emissions and contributes to a sustainable future. For every kWh of electricity saved, nearly 0.205kg of CO₂ emissions are prevented, resulting in a significant impact on our carbon footprint when installed across the residential and commercial markets.

Rising Energy Costs

By addressing the incoming voltage supply, Voltsmart distribution boards are the most cost-effective solution. Every home must have a distribution board. By controlling consumption at source, homeowners are empowered to effectively manage energy expenses, ensuring cost-efficiency and sustainable electricity use, ultimately lowering electricity bills.

You will

- Increase the lifespan of your electrical appliances
- Play a role in helping the environment
- Save money



HOW IT WORKS

Voltsmart reduces the incoming voltage to your property from the National Grid to between 220v & 225v.

99% of residential properties in the UK are affected by over-voltage. All electrical products carrying the CE mark run at an optimum efficiency of 220-230V but have a tolerant working range of 207-253V. The UK average voltage is 242V but some premises can experience highs of 253V, meaning electrical products are being overpowered. This results in a higher electricity consumption than required and a reduced lifespan of electrical products due to early burnout.





THE PRODUCT

Over 70% of UK homes currently have outdated distribution boards that do not meet current regulations. The Voltsmart residential distribution board is the only energy-efficient distribution board in the world. It is easy to install and is a smart, sustainable solution that helps save on energy bills and reduce carbon emissions. It also contains four fire safety features which help protect your house from the risk of an electrical fire.

KEY BENEFITS

- The world's only energy-efficient distribution board
- Easily installed in 99% of premises
- Includes up to four fire safety features
- Reduces energy consumption
- Enhances electrical safety
- Lowers carbon emissions
- Increases the lifespan of products
- Offers excellent value for money
- Suitable for various business and residential applications
- Contributes to a more sustainable energy future
- 10 year warranty
- Patent protected technology
- Finance available



INCLUDES UP TO 4 FIRE SAFETY FEATURES

Auto Transformer

Voltsmart's auto-transformer ensures safe and efficient electrical operation. It regulates voltage to 220V, preventing overheating, device breakdowns, and electrical fires. This extends equipment lifespan and saves costs. You can improve the safety, sustainability, and efficiency in your home with Voltsmart.

Arc Fault Detection

Arc Fault Detection Devices (AFDDs) improve electrical safety by swiftly detecting and addressing arc faults using microprocessor technology. These faults can lead to electrical fires. AFDDs continuously monitor electrical waveforms and cut power to the affected circuit upon detection, isolating the arc and reducing fire risk. Installing AFDDs enhances building safety by providing reliable and proactive arc fault detection.

Surge Protection

The necessity of surge protection devices for electrical equipment appliance and electrical system damage can occur due to power surges caused by lightning strikes or changes in supply. To ensure safety and reliability, it is essential to have surge protection devices in place. These devices detect and redirect excess voltage, protecting the electrical supply within your property.

Automatic Fire Suppression System

AFSS provides reliable fire protection in consumer units. It uses a sealed thermoplastic tube that bursts at 70°C, releasing an extinguisher to swiftly suppress fires. This system mitigates overheated cable risks, reducing damage and the need for extensive replacements. It enhances fire safety in residential and commercial settings, offering proactive protection against devastating electrical fires.



RENEWABLE SYNERGY

In a world that is rapidly transitioning away from fossil fuels towards an all-electric, net-zero future, Voltsmart is at the core of this transformation. Voltsmart works in perfect synergy with all other renewable products such as electric boilers, solar PV, heat pumps and EV chargers, protecting against overvoltage related issues that can cause significant problems with inverters and batteries. This leads to an extended lifespan of all your electrical appliances and reduced maintenance costs.

With the cost of electricity set to continue to rise over the next decade, Voltsmart will reduce your energy consumption, reduce your carbon emissions and reduce your energy bills therefore also reducing your return on investment.

Choose Voltsmart as your partner in enhancing efficiency and embracing a greener, more sustainable future.





VOLTSMART International

Voltsmart is an internationally patented distribution board that is designed to be eco-efficient and adaptable across the globe.

Our voltage optimisation technology is suitable for use in Europe, Asia, South Africa and parts of the USA and Canada, making it a versatile and practical option globally. However, with the additional fire safety features, our potential market reach is limitless.

We are committed to eco-efficiency and adaptability, making Voltsmart an excellent choice to help reduce your carbon footprint while ensuring safe and reliable electrical distribution.

Our mission is to provide efficiency on a global scale and reduce electricity bills for all consumers. Through our understanding of electrical and engineering infrastructures, Voltsmart recognises the implementation of future power sources may create pressure on national electricity grids. We are therefore committed to working towards safer, greener and more cost-efficient methods for electrical distribution. By doing so, we aim to alleviate some of the electrical supply problems that are present in many countries today.

With our patented technology, Voltsmart users can experience more efficient and cost-effective electrical distribution, ultimately leading to a better and more sustainable future for all.





SOUTH AFRICA

South Africa has a total installed electricity capacity of 58,095 MW.

The majority of South Africa's electricity is generated by coal-fired power plants (80%), followed by renewable energy sources (10%), and natural gas (10%).

South Africa's electricity grid is operated by Eskom, a state-owned company. Eskom has been struggling to meet demand for electricity in recent years, leading to rolling blackouts.

The South African government is working on a number of initiatives to improve the country's electricity infrastructure, including: investing in renewable energy, improving the efficiency of Eskom's power plants and building new transmission lines.

South Africa has a large and growing population. As the population grows, so does the demand for electricity. This puts a strain on the country's electrical infrastructure, which can lead to high voltage and fluctuating voltage.

Voltage optimisation is becoming increasingly popular in South Africa, as businesses and homeowners look for ways to reduce their electricity costs and protect their equipment.





TURKIYE

Turkiye has a large and complex electrical infrastructure, with a total installed capacity of over 100 GW. The country's electricity grid is divided into three main regions: the Anatolian Region, Thrace Region and South Eastern Anatolia Region. The Anatolian Region is the largest of the three and covers most of Turkiye's territory. The Thrace Region is in the northwest, and the South eastern Anatolia Region is in the southeast.

The voltage and frequency of Turkiye's electrical grid are 230V and 50 Hz, respectively. However, there are some areas of Turkiye that use a different voltage or frequency. The country's electrical grid is under significant stress due to the rapid economic growth. The demand for electricity has been growing at an average rate of 6% per year over the past decade. The government has been working on expanding the country's electrical infrastructure to meet the growing demand, with a focus on increasing the share of renewable energy sources in the electricity mix.

Despite the challenges facing Turkiye's electrical grid, the country has made significant progress in increasing the share of renewable energy in the electricity mix. In 2020, 50% of Turkiye's new power generation capacity came from renewable sources. The government has set a target of generating 38% of the country's electricity from renewable sources by the end of 2023. To achieve this goal, Turkiye has been investing in a variety of renewable power projects.





MALAYSIA

Malaysia's installed electricity capacity is 29,000 MW, with natural gas generating the majority of the country's electricity (45%), followed by coal (35%) and renewable energy sources (20%). Despite the significant contribution of natural gas to electricity generation, the Malaysian government has been actively pursuing renewable energy sources in recent years to reduce the country's carbon footprint.

Tenaga Nasional Berhad (TNB), a state-owned company, operates the electricity grid in Malaysia. TNB has been investing heavily in renewable energy to achieve the government's goal of increasing the share of renewable energy in the country's electricity mix to 25% by 2025. The company has focused on various renewable energy sources such as solar, wind, and hydroelectric power. The development of new renewable energy projects has also created new job opportunities and driven economic growth in the country.

In addition to renewable energy, TNB has also been exploring new technologies to increase energy efficiency and reduce carbon emissions. The company has implemented a demand-side management programme, which involves educating consumers on energy-efficient practices and promoting the use of energy-efficient appliances. By investing in renewable energy and implementing energy-efficient practices, TNB is playing a crucial role in helping Malaysia transition to a more sustainable and low-carbon economy.





INDIA

Under the "Power for All" initiative, the Indian government is working to improve the country's power infrastructure and increase the availability of electricity through various measures. These measures include:

Strengthening the power distribution network:

The government is investing in the development of the power distribution infrastructure to ensure that electricity reaches all corners of the country.

Increasing the use of renewable energy sources:

The government is promoting the use of renewable energy sources such as solar, wind, and hydro power to reduce the dependence on traditional fossil fuels and to provide electricity in remote areas where grid connectivity is difficult.

Supporting rural electrification:

The government is providing subsidies and financial assistance to households in rural areas to install electricity connections and promote the use of energy-efficient appliances.

Encouraging private sector participation:

The government is inviting private companies to participate in the power sector and invest in the development of power infrastructure.

The "Power for All" initiative has been successful in providing electricity access to many households in rural areas. However, there is still a long way to go to achieve universal electricity access in the country, and the government is continuing to work towards this goal.





AUSTRALIA

Australia generates 80,000 MW of electricity, with coal-fired power plants accounting for 60% of its generation, followed by renewable energy sources and natural gas, each contributing 20%. The electricity grid is divided into three regions: the National Electricity Market (NEM), the South West Interconnected System (SWIS), and the Northern Territory. The NEM, covering the eastern and southern parts of the country, is the largest electricity market in Australia, while the SWIS covers Western Australia and the Northern Territory has its own isolated electricity grid.

The Australian Energy Market Operator (AEMO) manages the NEM and SWIS and is also responsible for infrastructure development. The Australian government aims to improve the country's electricity infrastructure by investing in renewable energy, improving coal-fired power plant efficiency and building new transmission lines. Investment into renewable energy technologies is also being incentivised.

The government is building new transmission lines to improve the reliability and resilience of the electricity grid, ensuring efficient and reliable electricity distribution across the country to reduce the risk of blackouts and other disruptions to the electricity supply. Through these initiatives, the Australian government is striving to create a more sustainable and reliable energy future for the country.





UNITED EMIRATES

The United Arab Emirates (UAE) has a well-developed electrical infrastructure, with 230V and the frequency is 50 Hz. The country's electricity grid is interconnected, which means that power can be shared between different emirates.

The UAE's electricity sector is dominated by two state-owned companies: the Abu Dhabi National Energy Company (TAQA) and the Dubai Electricity and Water Authority (DEWA). TAQA is responsible for generating and distributing electricity in Abu Dhabi, while DEWA is responsible for the same in Dubai.

The UAE is committed to reducing its reliance on fossil fuels and increasing its use of renewable energy. The country has set a target of generating 25% of its electricity from renewable sources by 2030.

The UAE is investing heavily in renewable energy projects, including solar and wind farms. The country is also developing a number of smart grid technologies, which will help to improve the efficiency of its electrical infrastructure.

Key challenges facing the UAE's electrical infrastructure:

- **Increasing demand:** The UAE's population is growing rapidly, and this is putting a strain on the country's electricity grid. The government is investing in new power plants to meet this demand, but it is a challenge to keep up with the pace of growth.
- **Rising costs:** The cost of electricity is rising, due to a number of factors including the rising cost of fuel and the need to invest in new infrastructure. This is putting a pressure on businesses and consumers.
- **Climate change:** Climate change is putting a strain on the UAE's electrical infrastructure. Extreme weather events such as heat waves and droughts are increasing in frequency.



VOLTSMART®



 07917 336176

 jenny@voltsmart.com

 www.voltsmart.com