AB Solar Africa

GLOBAL GREEN BUILDINGS

Global Green Buildings

A roadmap to future proof real-estate

Voltage as a service

Immediate Financial Benefits
Reduced CO2 & kWh usage
Energy Efficient Building

Global Green Buildings

Global Green Buildings specialises in delivering innovative solutions for large-scale enterprises. Through our 'open' platform we offer solutions that make facilities more open, responsible and intelligent. Open for the newest advancements in smart building technology. Responsible for improvement of the well-being of all stakeholders including the environment and, Intelligent in the monitoring, reporting and management of complex energy systems.

Our belief is that we stand behind our guaranteed savings calculation and with our 4-step model (see back of this brochure) we create a data driven roadmap to future proof real-estate. Our business model requires no initial investments from our clients and therefor their savings begin day one.

In this brochure we first explain how the national grid is influenced, later we technically present our patented voltage optimisation solution and display how it improves the power quality. The effects of our systems can be found in reduced energy consumption as well as increased lifespan of equipment.

Voltage optimisation is one of the most misunderstood solutions in the clean energy space. Our supplier is globally market leader and has more than 7.500 installations in a wide range of industries. The system has proven to achieve savings between 7-15% on the total kWh consumption.

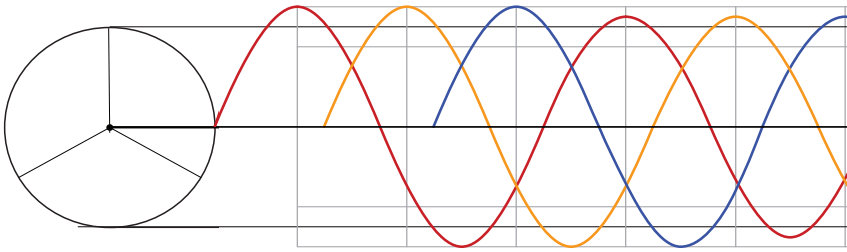
'Lets collaboratively expand our green footprint"

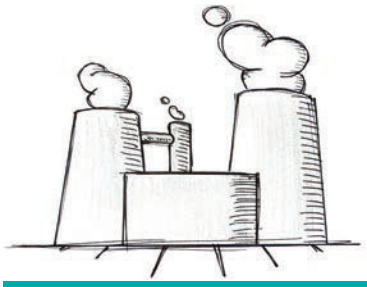
Managing Director,
Benoit van Beeck Calkoen

Powerstar

- Improved power quality
- Reduced energy usage
- Increased lifespan
- Lower costs

Influences on the power grid





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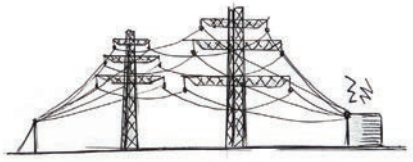

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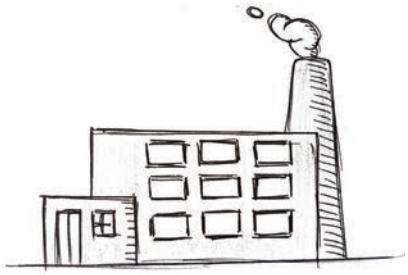

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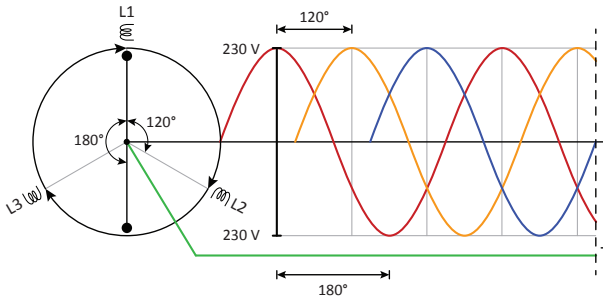
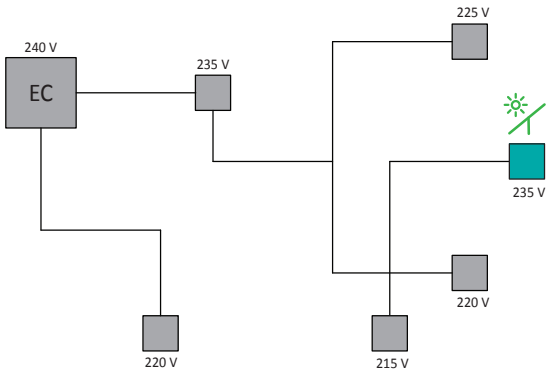
1 Generation

Powerplants generate electricity and supply this to the grid with a voltage of up to 765 kV and with a 60Hz or 50Hz (frequency). High voltages reduce the loss and cable thickness for transportation.



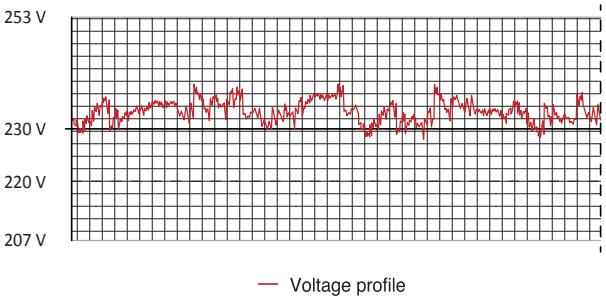
2 Distribution

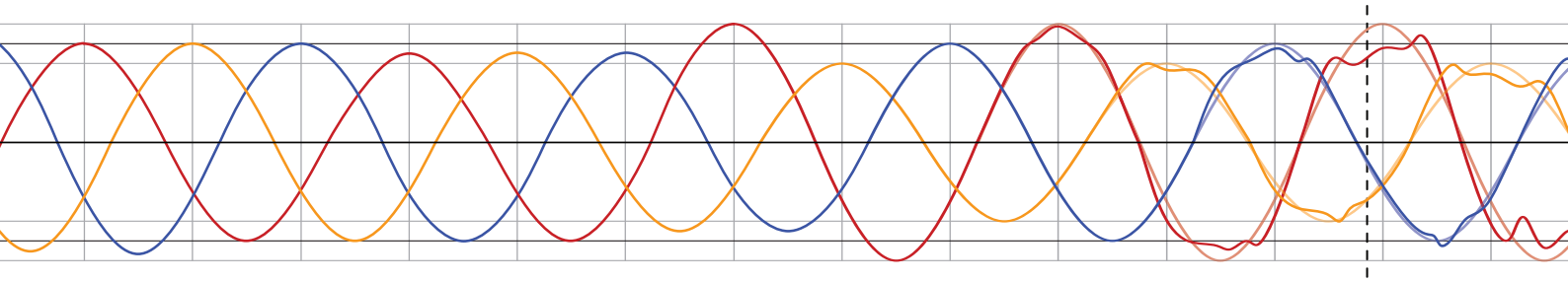
Utility companies distribute electricity over and through transmission lines, substations, secondary lines and step down transformers at or near the customer's site. This is typically between 13kV and 120 Volts. The utility companies are allowed to have voltage fluctuations within a 10% margin. During the transportation the length of the cable accounts for a different voltage supplied per location.

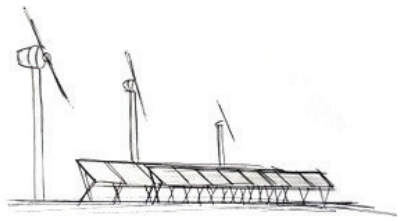


3 Industry

Large loads in not only influence their own internal distribution but also the external grid that lies above it. All loads collectively result in continuous voltage fluctuations with so called peaks and drops.







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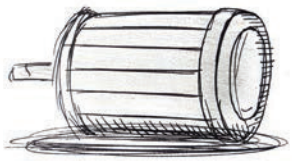

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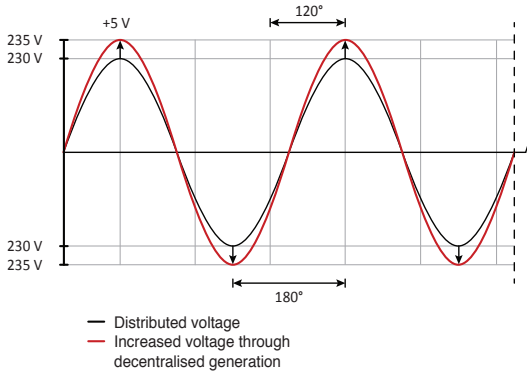
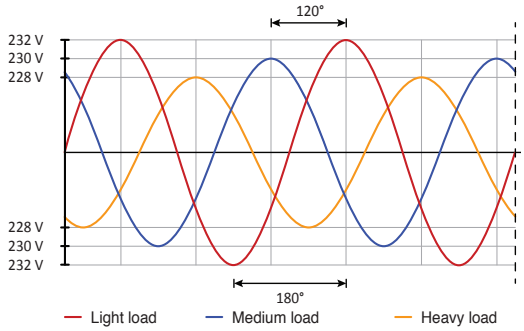
4 Decentralised generation

Solar, wind and other decentralised generation increases the instability. Apart from that they increase the voltage with converters in order for the electricity to flow to the loads.



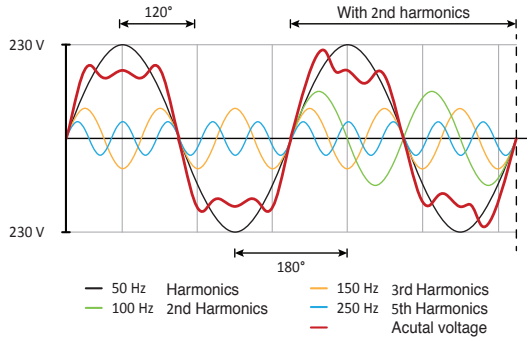
5 Phase imbalance

The three phases on which our grid is build are often disproportionally loaded, leading to a different voltage for each phase. Three phase engines especially lose power and become less efficient.

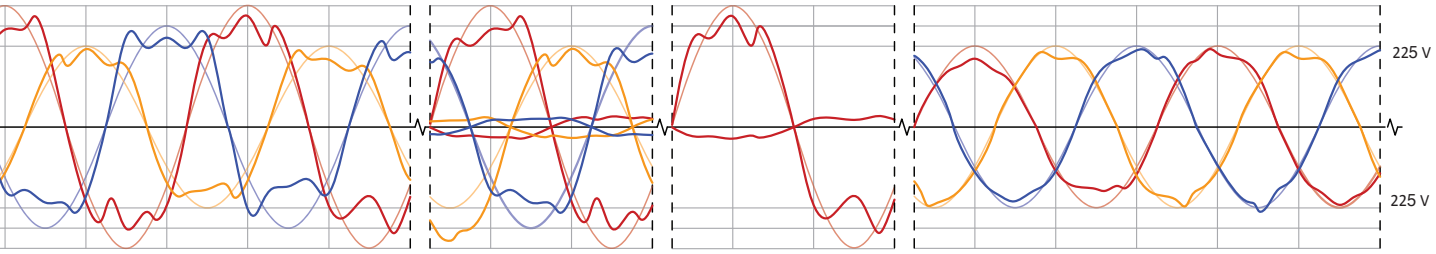


6 Modern equipment

Many equipment works internally with another frequency than the fundamental frequentie (60Hz or 50Hz). These internal variations influence the grid with detrimental vibrations, so called harmonics.



'The grid is continuously affected by all different influencers which can cause a poor power quality. Recently, this has become a larger problem due to all modern equipment as well as decentralised power generation. A poor power quality increases the consumption, reduces the lifespan of equipment an may lead to blackouts and failures.



Our technical solution

A poor power quality (harmonics, phase imbalance and over voltages) leads to more energy costs, carbon emissions and excessive wear on electrical components. The above illustration displays how the 'excessive and dirty' primary voltage is reversed for correction. When we look at one phase (see red line) we can see that the excessive current is 'recycled' by pushing it 180 degrees, in antiphase of the fundamental frequency.

The patented design effectively improves the power quality in a 99.9% efficient way. By adding both the fundamental and the 'reversed primary voltage' the real provided energy to your site is 'cleaner' and has the optimal voltage for your equipment's design. The overall improved power quality even benefits energy efficient loads like VSD & LED. Last but not least our product has great benefits in combination with solar becuase solar increases the voltage and fluctuations.

Powerstar Lite

Fixed reduction

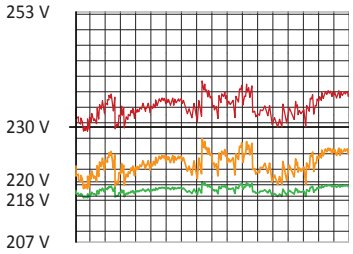
- Reduced harmonics
- Phase balancing
- Intercepted peak voltages
- 99,9% efficient

Powerstar Max

Full stabilisation

- Reduced harmonics
- Phase balancing
- Intercepted peak voltages
- 99,9% efficient

Voltageprofile



Powerstar

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- Educed energy usage
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DEBUUT (Hospitality developer)

'We didn't expect that Global Green Buildings would save us 12,7% on our kWh usage. Apart from the electrical savings we acknowledged a significant reduction in broken lightbulbs, who earlier had to be refitted weekly. The clear explanation and support during the installations were excellent. The possibility to lease the equipment suited our business model well, since our core activities is in hospitality. We now look for more locations to optimise.'

UNICA (Large Installer)

'We succesfully installed the voltage optimisation unit in our Headquarters. We really liked the idea of guaranteed savings and saw a reduction 7,8% on our overall energy consumption. We aim to further role out the units within our client base since our customers also seek to become more energy efficient. Especially the combination with solar on rooftops is where we can see the greates potential.'

OUR APPROACH

Monitor

We conduct a site survey to extract data of the actual situation and to establish a baseline

Identify

Connecting the data often results into quick wins, show what solutions can be implemented and displays the potential savings

Implement

With your consent we further optimise your building by implementing relevant and proven solutions

Validate

After the implementation we verify the savings and continue to seek for new solutions

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