



Hybrid Energy

CrossPower makes the desert green.



CrossPower 135 kW-system successfully in service in the Lithuanian Armed Forces since February 2016

Bringing electricity to people to improve their lives

In 2014, in response to those calls, PFISTERER began developing its hybrid energy policy in accordance with its aim of: "bringing electricity to even the remotest areas of the world in order to improve peoples' lives."

PFISTERER's strategy was based on the creation from scratch of scalable hybrid energy systems (CrossPower) in both mobile and stationary mode from 25 kW up to 5 MW, using primarily renewable sources in combination with generators (gensets) and batteries and an automatic management system to generate electricity 24 hours around the clock.



Electricity is the key for the development in a lot of countries in the world. People will stay put when they can use energy

PFISTERER's mobile CrossPower 150 kW-system, fielded in early 2016 in Vilnius (Lithuania), marked a real breakthrough in the area of mobile microgrids. The system has been up and running for one year now under the harshest possible conditions without the slightest problem.

PFISTERER – industrial trendsetter for hybrid energy

Hybrid energy strategy

The challenges currently faced for the supply of energy include reducing the use of fossil fuels and logistics to a minimum, thereby enhancing reliability and effectiveness. A modern, intelligent multi-purpose energy system means the deployment, wherever needed, of robust, scalable microgrids based on renewable energies. Battery storage and modern diesel generators ensure that the supply network remains stable. The intelligent control system maintains an optimum balance between power generation and consumption.

CrossPower design

The basic idea behind CrossPower is to combine diesel generators, which are widely used, with various interchangeable and renewable sources such as solar, wind and biomass in order to reduce diesel consumption by more than 50% in regions such as northern Europe, and by up to 75% south of the Mediterranean. Those figures are achievable if all components are controlled by a computerized management system, in order to ensure that any unused energy is stored in a battery system that at the same time serves as the central energy source. The battery system is designed to deliver energy at all times at a stable voltage level, as this is one of the most important requirements for reliably operating very sensitive electronic equipment.

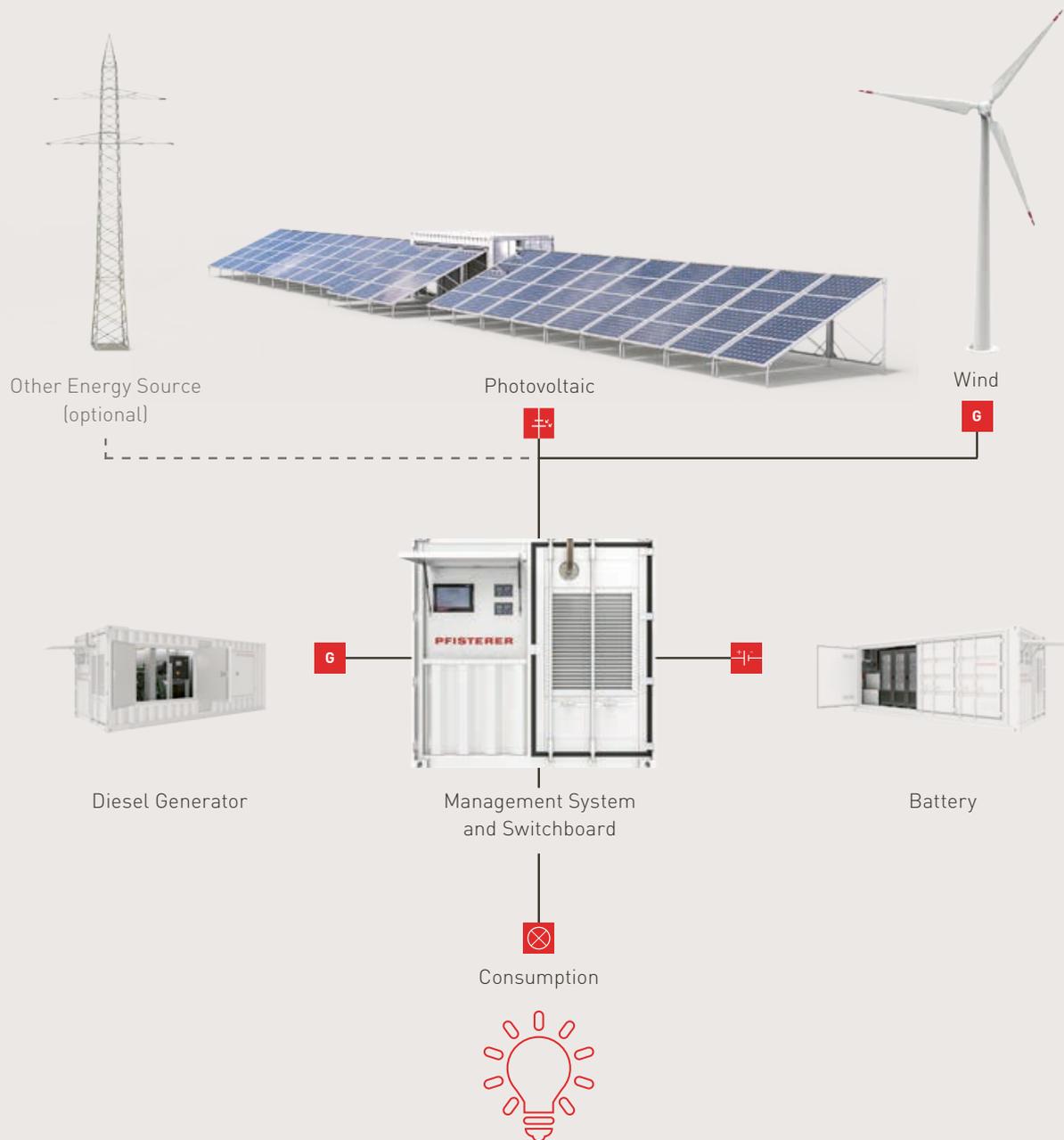
Product implementation

Microgrids for decentralised use must be adaptable to all requirements. They must be available in mobile and stationary mode and ensure an energy supply 24 hours around the clock under all weather conditions anywhere



Model of a CrossPower 3 MW-system prepared for energy supply to an African village.

CrossPower – focusing on energy management



CrossPower system for mobile or stationary use from 25 kW to 5 MW means the generation and distribution of energy through a combination of use of alternative energies, batteries and generators steered by an automatic management system which is integrated in the container, housing also batteries and the genset.

and for any purpose. Their capacity must be adapted to real requirements, making use primarily of alternative energy sources and simplifying the logistics chain by making minimal use of diesel gensets as a back-up asset.

The days are over of producing energy during the day and making only exceptional use of batteries during the night to store any unused electricity. The aim is to provide a stable voltage 24 hours around the clock in all weathers.

CrossPower covers a range from 25 kW up to 5 MW. All systems are designed to be easily and rapidly fielded and maintained. The products up to 250 kW are mainly mobile systems that can be transported by various means such as transport aircraft, helicopters, transport vehicles, pickups and trailers as well as by sea. For systems over 500 kW, PFISTERER provides standardized land, ship and air transportable stationary equipment.

A user-oriented strategy

PFISTERER's CrossPower systems are designed to be installed either temporarily or permanently for various civil and military applications. Every system is developed, produced and tested at PFISTERER's premises in Winterbach near Stuttgart. Each product is tailored there on the spot to the customer's individual requirements and to the system's future location. The customer has the possibility of incorporating existing equipment such as gensets, photovoltaic panels, wind sets etc. into the system, thus reducing investment costs. PFISTERER believes that this possibility of combining individual components without being tied to one manufacturer offers benefits in terms of costs and of efficiently meeting customer requirements. A work-share is offered to the customer as a matter of course.



CrossPower 60 kW at PFISTERER's premises for training purposes offered to users

CrossPower: fields of application



No chance for agriculture without irrigation – PFISTERER's CrossPower systems bring energy to the most remote areas.

Microgrids have numerous domains of application including construction, mining, irrigation, remote hotels, recreation centres, etc.



CrossPower SG 150 in a remote area to power water pumps

Microgrids can be used in the field of civil and/or military crisis management to enable disaster-management teams to quickly restore an energy supply for the first rescue operations, including the installation of hospitals.

Other areas of interest for PFISTERER are humanitarian aid operations conducted by international organizations, peacekeeping operations and cooperation with NGOs.

The requests that PFISTERER has been receiving from various countries in Africa and Asia since the successful deployment of the CrossPower system in Lithuania indicate a growing interest in its microgrids. They are seen as the basis for supporting an efficient development cooperation policy on site, enabling whole regions to get much-needed electricity and to reduce fuel costs.



CrossPower system SG 35 prepared mobile use.



The future is in microgrids

For all users, the reduced logistics resulting from the use of hybrid energy frees up manpower, reduces costs and allows more freedom and flexibility for other investments. Reduced fossil fuel consumption is a welcome contribution to saving the climate.

Wherever a microgrid is needed, it must combine **generators, photovoltaic** and/or **wind** and/or **biomass** with **batteries** as the main corehard, steered by a fully automatic **management system**. Only a fully automated system for managing the different energy transmission solutions and components can guarantee a stable energy supply.

PFISTERER is one of the world's leading technology companies for energy transmission systems and components. The German-Swiss family business, founded in 1921, develops, produces and distributes components and complete solutions for particularly sensitive interfaces in modern energy networks. In this respect, it is one of the few companies worldwide that offers solutions for the whole transmission chain, from low and medium to high and extra-high voltage. All over the world, and all from one place!

PFISTERER is able to meet also worldwide the growing demand for localized hybrid energy supply with its microgrids thanks to the scalable CrossPower series.

For our customers, this means: optimal solutions for all requirements, both now and in the future.

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The PFISTERER Group, of which LAPP Insulators is also a part, is one of the world's leading specialist equipment suppliers and system providers in the area of energy infrastructure. About 2,700 employees develop, produce and market components and complete solutions for the particularly sensitive interfaces in modern energy grids. With a complete range of products and services, the PFISTERER Group offers customized solutions for the entire transmission chain of low, medium, high and extra-high voltage. Everything from under one roof. Worldwide. For our customers, this means: optimum solutions for all requirements – now and in the future.