

Solutions

# Mini-Grid.



MFCU 20024  
22G1

MAX. GR.	30,480 KG
	67,200 LB
TARE	2,150 KG
	4,740 LB
NET	28,330 KG
	62,460 LB
CU. CAP.	33.1 CU. M.
	1,170 CU. FT.



# Access to energy.

Access to energy is essential for sustainable development, yet Africa faces major challenges in achieving SDG 7—“Affordable and Clean Energy for All.” With limited infrastructure for power generation and distribution, millions are left without reliable, affordable energy, limiting progress in health, education, and economic growth.

Africa’s energy challenges include limited infrastructure, funding constraints, and reliance on expensive fossil fuels. While urban areas often receive priority, rural communities remain underserved, and the effects of climate change make sustainable energy even more urgent.

Transitioning to clean, renewable energy can pave the way for a brighter, sustainable future for Africa, bringing energy access and economic opportunities to every community.

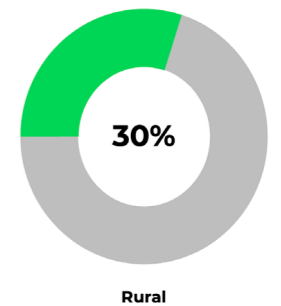


**„747 Mio. people worldwide without access to electricity 2023.“**

In 2023, 747 million people worldwide lack access to energy, with a staggering 600 million from Sub-Saharan Africa alone. This energy poverty hinders progress and opportunities, highlighting the urgent need for innovative solutions and investment in sustainable energy access.

## 30% Rural Energy Access

In Sub-Saharan Africa, only 30% of the rural population has access to energy, compared to 81% in urban areas, highlighting a significant disparity in energy availability.



## Need for reliable power solutions

Many rural areas or small businesses rely on diesel generators, which are costly, environmentally unsustainable, and logistically difficult to maintain.



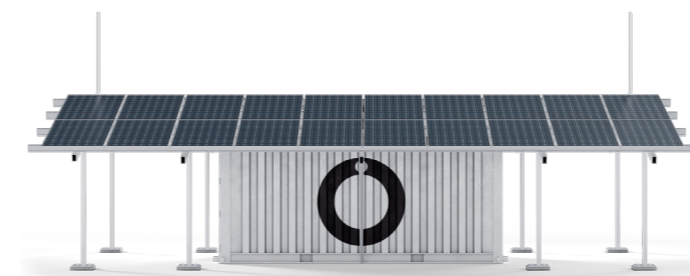


# Mini-Grid.

Solar Mini-Grids are standalone systems that provide electricity to rural or isolated areas where the main grid is either unavailable or unreliable. The containerized solution by Off-Grid Europe is designed to withstand the most extreme conditions and for the longest lifespan possible.

## Technical specifications

- Modular size from 30 kWp to 90 kWp solar capacity, from 80 kWh to 300 kWh storage capacity
- High quality components
- The system is designed and produced in Germany
- Plug-and-play containerized solution
- Tested before shipping
- Equipped with the Off-Grid Controller for Monitoring & Control
- Sun Hat Mounting Structure for Solar panels



Off-Grid Europe Solar Mini-Grid System (Containerized Solution)

## Benefits



### Containerized solution

Safe transport, heat protection, fast deployment.



### Sun Hat

Our own metal structure, the so-called Sun Hat is the perfect addition to our systems.



### Turnkey solution

Clean and reliable energy for rural areas.

# Mini-Grid<sup>(new)</sup> with Ohms Box.

Off-Grid Europe's Solar Mini-Grid solution now features the new innovative Ohms Box, a cutting-edge Battery Energy Storage System (BESS) designed for maximum efficiency. The package also includes the Sun Hat, a customized mounting structure, and high-performance Solar PV panels for a complete energy solution.

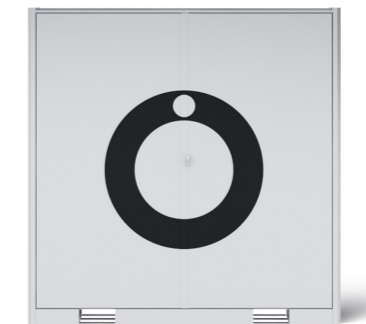


Off-Grid Europe Solar Mini-Grid System (Ohms Box Solution)



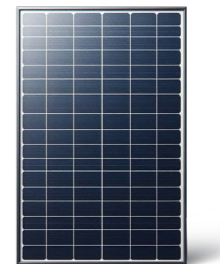
### Sun Hat

The so-called Sun Hat is a customized mounting structure for solar panels, designed to enhance the performance of our containerized Mini-Grid Solution.



### Ohms Box<sup>(new)</sup>

The Ohms Box is a compact battery energy storage system (BESS) that is designed to operate in remote and harsh conditions for an extended period of time.



### Solar PV

Solar PV (Photovoltaics) is our main technology that converts sunlight directly into electricity using solar cells.



### Off-Grid Controller

The Off-Grid Controller optimizes energy usage by monitoring, managing and controlling the flow of electricity.



### Services

Off-Grid Europe offers services from EPC and financing to operation and maintenance.

What we did.

# Rural electrification in Senegal.

What we did.

## ASER300.

Since 2020, Off-Grid Europe is part of the ASER300 project that set the target to electrify at least 300 villages in Senegal. Up until today more than 380 villages are being electrified.

Together with ASER (Agence Sénégalaise d'Électrification Rurale) and GAUFF Engineering, OGE builds and delivers Mini-Grids to rural regions where people don't have access to electricity yet. Installation and commissioning of the systems is carried out by Off-Grid Africa.

The Senegalese state is aiming to achieve comprehensive access to electricity for all its citizens by 2025. The majority of this electricity is to be generated from renewable energies. For rural areas in Senegal in particular, electrification is an important step towards sustainable and environmentally friendly economic and social development.

In the ASER300 project, a PV system of 15 up to 90 kWp with LFP battery storage is installed per village. Additionally provided are: Distribution networks comprising a total of around 840 km of lines; 25,000 masts and 3,600 LED lanterns for street lighting; 24,000 house connections including five sockets and five LED lamps in each connected household and further equipment for the productive use of energy, such as refrigera-

tors, water pumps and grain mills.

To achieve this, a number of private and public, German and Senegalese stakeholders were brought together. As a first step, preliminary studies were carried out to determine the exact energy requirements for each village. On this basis, the plans for project implementation and logistics were developed. The actual installation work will then take place simultaneously in several villages in order to keep to the ambitious schedule.

An important part of the project is a training program in which local workers are trained in the installation, operation and maintenance of the systems.

This important project with a volume of 120 million euros is being financed by KfW IPEX-Bank while the German government is supporting the project with a credit cover from Euler Hermes.

A total of 195,000 people will benefit from the electricity generated through this project.



6

MWp

Installed solar capacity



25

MWh

Installed battery storage



203

Villages

Electrified

**“At Off-Grid Europe, we are committed to innovation, constantly optimizing our technology to combat energy poverty. With our work, we strive to uplift the lives of millions of people.”**

Christiane Kragh, CEO

# Who we are.

Off-Grid Europe (OGE) was founded in 2010 by Mark Kragh and Christiane Kragh. The company developed into a provider of complex technical energy solutions. OGE provides customers with end-to-end renewable energy solutions.

OGE specializes in PV (Photovoltaics) and BESS (Battery Energy Storage Systems) and works across a wide spectrum from system design and planning to system procurement and construction. The company's proprietary intelligent software solution, the Off-Grid Controller, provides efficient energy monitoring and control.

Since 2020, OGE is part of the rural electrification project ASER300 in Senegal. In the course of realizing this project, OGE founded its Senegalese subsidiary Off-Grid Africa. Together, the two companies are making an important contribution to the electrification of rural regions in Senegal and beyond.

By providing competitively priced, easy to maintain and scalable energy systems, OGE strives to create a positive impact on the environment, local economy and uplift the lives of millions of people.

Innovation is at the heart of OGE. They recently launched Ohms Box, a compact BESS that can be used to generate electricity in off-grid regions and in harsh conditions, even for MW-sized installations.

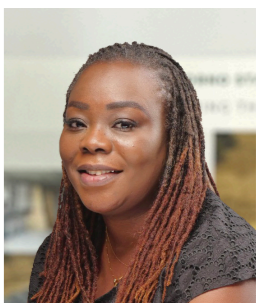
Additionally, the company developed a solar powered cooling hall: Much Cooler to combat post harvest loss which is still a huge issue on the African continent. With 100% solar power and battery storage, farmers can store and cool their harvest. This solution contributes to nutrition security, price stability and food quality in Africa.



Christiane Kragh  
CEO and co-founder



Mark Kragh  
CTO and co-founder



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