



**Off-Grid**  
economical. reliable. independent.

## Secure power supply for telecommunication sites and networks.

### The challenge

Mobile network and TETRA sites are often located in areas that are difficult to access. This presents an enormous challenge regarding energy supply and accessibility. From alpine and arctic regions to mountains, islands, jungles and deserts, telecom operators are struggling to provide the energy needed to operate their equipment and service their customers. Access by road is often limited to a few months of the year or is only possible using helicopters. Nevertheless, an uninterrupted power supply is essential. Repeater stations are particularly critical because entire networks depend on them. Power requirements vary between 150 W and 500 W for remote repeater stations or small BTS (Base Transceiver Stations) as well as backup power for critical TETRA networks.

### Previous solution

Most operators use diesel generators, often in combination with solar or wind power systems. These are inefficient and high-maintenance, expensive to operate, and cause harm to both people and environment. Renewable energies are considered to be the economical alternative, but are affected by seasonal fluctuations or lack of wind and sun. The space required for solar-only systems is also considerable. Fuel cells are now also being used in some cases. On one hand, however, operators face enormous logistical challenges when operating with hydrogen. On the other hand, direct methanol fuel cells require high-purity fuel and can only be used to a limited extent in sub-zero temperatures.

### Power consumption

Sample calculation to determine the daily energy demand of a radio relay station

	Power [W]	Runtime [h/day]
Directional antennas (3 x 40 W)	120	24
Electronic heating	180	8
Consumption per day (kWh)		4.32

replacing  
diesel generators.  
with SIQENS  
fuel cells.

## The SIQENS solution

The SIQENS Ecoport 800 is based on our patented fuel cell technology. As a fully automatic battery charger it can be easily integrated into off-grid energy systems. Supply gaps from photovoltaic and wind systems can thus be covered reliably and batteries can be considerably reduced in size.

The hydrogen required for energy generation is obtained from liquid methanol: an energy carrier that is globally available at low cost – regardless of the expansion of the hydrogen infrastructure. You and your customers benefit from an economical, reliable, and independent system – while making a decisive contribution to reducing global carbon emissions. In short: we provide a sustainable and economical solution that meets the challenges of the 21<sup>st</sup> century.

# SIQENS

**SIQENS GmbH**

Landsberger Straße 318D

80687 Munich | +49 89 4524463 0

sales@siqens.de | www.siqens.de

**% economical.**  
Reduces fuel consumption and maintenance

**24 reliable.**  
Energy supply throughout the entire year

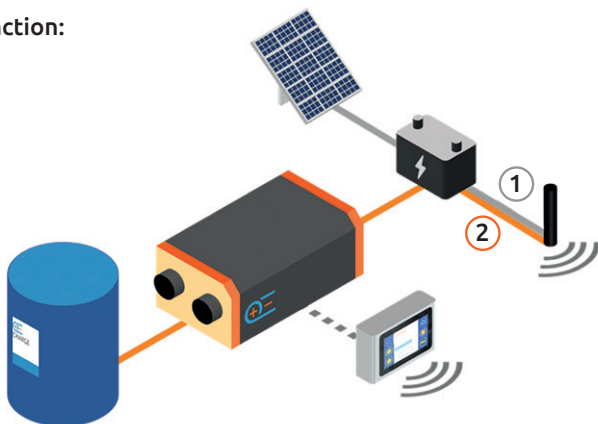
**independent.**  
Everything in view with SIQENS Remote Monitoring

## SIQENS Ecoport 800 to power a radio relay station of the mountain rescue

Daily power consumption of 4.3 kWh



**Function:**



① PV charges the battery, electrical loads are powered directly from the battery.

② The SIQENS Ecoport 800 starts recharging the battery automatically once the sun is not shining and the battery reaches a critical-threshold. The supply of energy continues without any interruption.

In the Alpine mountains, microwave relay enables fast, secure and powerful transmission of alarm-relevant data in the event of a disaster - thus ensuring the connectivity between separate districts. During planning, particular emphasis is placed on stability, resilience and redundancy. To ensure a weather-independent power supply at critical locations, the SIQENS Ecoport 800 is used accordingly. The energy from the fuel cell is sufficient to power not only the radio transmission antennas but also a small electric heater, which is used to defrost the site in winter.

economical.  
reliable.  
independent.

