GENCELL BOX™

LONG-DURATION BACKUP POWER SOLUTION

- Immediate injection of 5kW power with high efficiency & unlimited run-time

- Highly resilient to extreme environmental conditions

- Designed to fit outdoor installations

- Simple annual maintenance

- Zero CO2 emissions, no noise, no vibrations

- Designed to connect with standard telecom Energy Management System protocols

- Easy plug-and-play installation

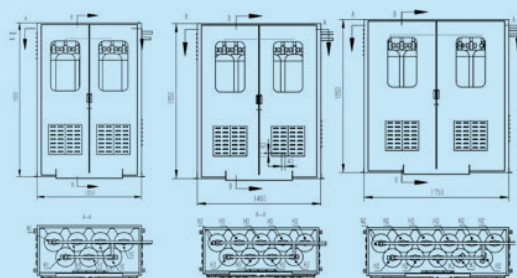# COMMUNICATIONS DEPEND ON CONTINUOUS POWER TO WEATHER STORMS

Ever-more frequent storms, floods and power outages are wreaking havoc, threatening to destroy lives and property, and impacting public safety everywhere. In the past few years our world has experienced multiple climate-related catastrophes and there does not seem to be an end in sight.

These disasters reinforce what we already know – that telecoms and digital connectivity play an indispensable role in today's world. Not only connecting responders during emergencies, but they have become crucial for enabling remote work and learning and e-commerce, which have become the primary methods for businesses, communities and individuals to function. This connectivity is entirely dependent on electricity to power the network equipment and devices we use to stay connected With systems becoming only more power-hungry, moving to clean power solutions lets telecom providers replace the fossil fuels that are the root cause of the climate crisis driving the outages.

The GenCell BOX resolves the key weaknesses of the most common backup power solutions: the limited duration and disposal issues of batteries, the fumes, noise, CO2 emissions and lengthy startup time of diesel generators and the daylight limitations of solar PV energy systems. Fueled by hydrogen, the alkaline fuel cell-based GenCell BOX delivers uninterrupted operations for critical communication systems.

THE SOLUTION
GenCell BOX electrochemical generator and gas cabinet for hydrogen cylinders
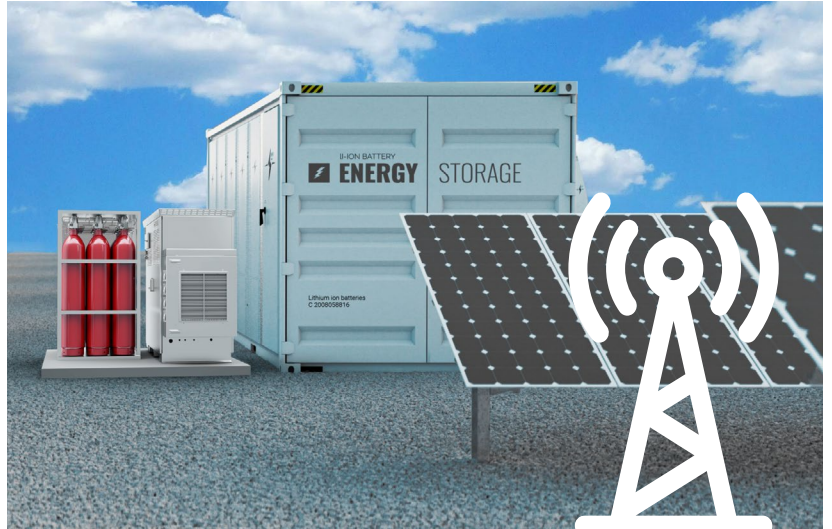

Gas cabinets meeting OSHA 1910.103 requirements for H2 safety can store between 4-10 cylinders.

TYPICAL DEPLOYMENTS

The GenCell BOX long-duration backup solution provides 5kW backup power for critical telecommunication applications:

• Base stations

• Cellular networks
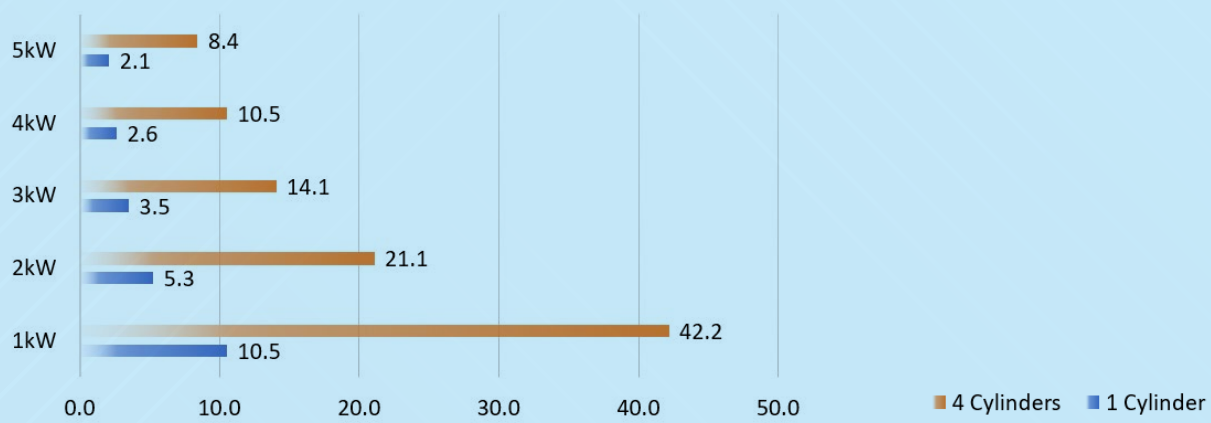
• Internal emergency systems

• Radio and WiFi

GENCELL BOX
LONG-DURATION BACKUP
FOR CRITICAL COMMUNICATIONS

The GenCell BOX provides long duration 5kW backup power, specifically designed to meet the requirements of telecom base stations. Designed to be extremely reliable, the GenCell BOX is highly resilient to extreme environmental conditions (temperature, humidity, salinity), requires only semi-annual maintenance or servicing, and is completely green. Producing no noise or CO_2 emissions, the solution complies with environmental regulations and renewable energy incentives.

In alignment with telecom base station specifications, the GenCell BOX suits outdoor locations, outputs 48V DC and is capable of connectivity with standard telecom energy management systems. In the event of grid outage, the ultra-reliable BOX kicks in immediately, even in extremely cold temperatures, to deliver uninterrupted power for continuous telecommunication operations. Providing a potentially unlimited source of up to 5 kW power, the Gencell BOX is supplied with a modular gas cabinet to meet any duration of backup power required: 4 cylinders of hydrogen provide over 8 hours of 5kW power and 20 cylinders provide over 40 hours of 5kW power.

BACKUP CAPACITY (IN HOURS) PROVIDED BY HYDROGEN CYLINDERS (EACH 50 LITERS - 200 ATM)

Power	4 Cylinders	1 Cylinder
5kW	8.4	2.1
4kW	10.5	2.6
3kW	14.1	3.5
2kW	21.1	5.3
1kW	42.2	10.5

SPECIFICATIONS

PERFORMANCE	
Rated Power Configurations	5kW
Output Voltage	48 VDC
Emissions	Heat, Water Vapor

FUEL	
Hydrogen	99.95% or higher
Nitrogen	99.9% or higher (used only in Emergency Mode)
Fuel Consumption	70 g/kWh
Input Pressure	3-5 bar (43-72 psiG)

ELECTROLYTE	
Potassium Hydroxide	28-32 % w/v

CONTROL & SYSTEM MODULES AND ALARMS	
Remote IoT Manager	Available
Remote Start and Shutdown	Available
User Interface	Local and Web Interface
Access Password Protection	User Level and Service Level
Alarm/Event Monitoring & Reporting System	Local Alarm with Email Or SMS
Alarm History Logging	Records, Events and Logs
Configurable Alarms	Available

PHYSICAL	
Footprint	L 2.0m x W 0.8m x H 1.63m L 6.56' x W 2.62' x H 5.35'
Sound Pressure	55 dB at 1m

NORMAL OPERATING CONDITIONS	
Operating Temperature	-20°C up to +45°C (-4°F up to +113°F)
Operating Humidity	10-95%RH, Non-Condensing
Storage Temperature	-20°C up to +55°C (-4 °F up to +131°F)
Ingress Protection	IP54