

Power Backup Solutions for Health Care in India

Two central problems exist everywhere – The issue of the quality of the power and the issue of the continuity of power management. In a typical medical facility, there are different aspects of power usage. On one side, there is the infrastructure in terms of the power side and digital infrastructure. Then, there is the medical equipment. Finally, there is a requirement for data storage in medical facilities.

The healthcare sector is flourishing worldwide, with India, in particular, reaping the benefits of an increasingly health-conscious population, highly qualified doctors and more. The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities. To augment this growth further, the ubiquitous presence of a highly-efficient power backup infrastructure is needed. This world-class infrastructure, brilliant doctors, and less waiting period have made India a potential nation for health and medical tourism.

India presently has 18 % of the global medical tourism market. According to the Ministry of Tourism, medical tourism in India has the potential to cross the \$9 billion mark.

Now, what needs to be done to ensure the desired infrastructure to fix the lags in efficient healthcare delivery:

One solution does not fit all

Interestingly, this is a critical sector that needs customized solutions due to its varied infrastructure, including complex medical equipment, lifesaving machines, a data centre that is a storehouse of patient's data, etc. Therefore, a single UPS solution or generator does not fit the bill.

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structure in terms of the power side and digital infrastructure. Then, there is the medical equipment. Finally, there is a requirement for data storage in medical facilities.

Healthcare facilities need complete power protection (power quality and continuity) solution that will maximize uptime and a large and efficient service team to support its lifecycle, enhance overall efficiency, reduce power consumption and optimize availability.

Challenges faced

The availability of continuous, quality power is crucial for the optimal performance of critical applications in the healthcare industry. Power continuity is vital, especially when lives are at stake. Every second counts when medical devices are operational.

Everything in a hospital requires a constant stream of substantial electricity, from life-support & monitoring systems to diagnostic imaging units. Hospitals spend exorbitant money designing fail-safe systems yet experience crises when they face power disruptions. Imagine a power fluctuation in the middle of a critical surgery or CPR, and even milliseconds can have far-reaching implications.

A natural disaster that interrupts the functioning of lifesaving equipment can have a lasting and, at times, fatal impact not only on the patient but can also damage the reputation of the medicos and the hospital.

Another critical challenge is the lack of



knowledge on what capacity and type of UPS will best meet the needs of their hospital. Hospital owners or decision-makers might not possess adequate knowledge or have access to information to make an informed decision.

According to a study by the Public Library of Science, power outages at hospitals impact health at many levels, from making it difficult to receive care to maintaining available resources.

Solution

To support the functioning of critical lifesaving equipment, healthcare facilities need to be prepared to withstand temporary and extended outages. Even a seemingly short power outage of a few seconds can be fatal, compromise the health of individual patients and cause heavy damage to sensitive medical equipment and IT systems.

Equipment requires both continuities of supply and the quality of supply; within the quality of supply, the voltage poses a significant challenge.

Jakson has BESS (Battery Energy Storage Solution) specifically for that application. It is equipped with a hybrid inverter, lithium-ion batteries, and an intelligent energy management system, the Energy Storage System has the intelligence to combine grid power, solar energy, wind power and even DG power supply. It provides carbon-free



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Reliable Backup Power

The best part about BESS is that it can be integrated with Solar energy. The excess energy produced by solar panels is stored. This energy is then earmarked for later use. So when the facility experiences an outage or disconnection from the grid during any essential operation, it can utilize the solar battery backup to access power, even during an outage.

Solarisation of clinics can help India achieve its ambitious solar energy goal of 100 gigawatts (GW) by 2022. As per the latest government data, India has installed 56.951 GW of solar power.

Less dependent on the grid/ Zero dependence on Fuel & Fuel storage

A battery backup system can be

charged either from solar rooftop photovoltaic (RTPV) systems apart from the primary grid. Unlike a generator it does not use any fuel & neither does the infrastructure need any fuel storage facility.

Solar battery systems enable you to build a healthcare facility far more resilient and less dependent on the grid or alternate fuels.

Battery Energy Storage Systems play a more significant role in providing electricity access to healthcare consequences in rural India. Research administered by the Council on Energy Environment and Water (CEEW), supported by Oxfam India, shows that on average, health facilities with solar power panels attended up to 50% more out-patients each month, handled up to 50% more institutional deliveries, accepted a more significant number of in-patients, and implemented round-the-clock.

Instant Power Backup

The operations in the hospital need a constant power supply or instant back-up in case of any power outages. In this case, BESS is the best solution to provide a continuous and instant power supply and regulate network stability with very high-power output. No other back up power can give you both instant back-up as well as continuity.

Reduced carbon footprint

Installing Battery Energy Storage Systems allows you to reduce your home's carbon footprint and move closer to self-sufficiency. These systems are ideal for anyone who wants to reduce green-

house gas emissions and minimize pollution.

Case study of Chhattisgarh: Model state for renewable initiatives

Regarding health infrastructure, especially those using solar panels and BESS for their power requirements, Chhattisgarh is the most equipped city in India. It runs about 790 functioning primary health centres, many of which face regular power outages at peak patient times during the day (from 12 pm to 4 pm).

The state embarked on an innovative green energy path to make health centres more efficient by using solar power. Chhattisgarh installed two kilowatts peak (kWp) off-grid solar photovoltaic (PV) rooftop systems with Battery Energy Storage Systems across 570 primary health care centres (around 72 per cent of all functioning centres) through the Chhattisgarh Renewable Energy Development Agency (CREDA).

Healthcare, and the decision-makers within it, must understand the unquestionable role

Battery Energy Storage Systems can play in patient safety and care. It works perfectly as the future of power in healthcare which is environmental-friendly and works in every vulnerable situation.

The system provides carbon-free clean power and enables an uninterrupted silent power supply while significantly reducing costs. It is a part of the commitment to create a sustainable health eco system with access to reliable electricity, especially in far-off & rural areas.

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