S4GA solar-powered runway edge light (right) installed as a backup for a conventional light (left)

Maximizing Airport Resilience with Back-Up Solar Airfield Lighting

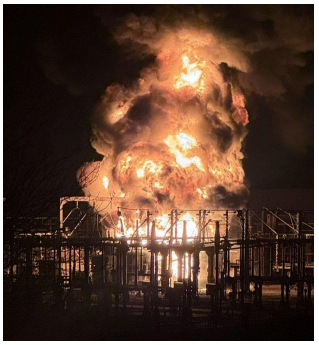
From the world's busiest international hubs to the small regional airstrips, blackouts can - and do - bring operations to a halt. Power infrastructure failures are an increasing risk due to aging systems, extreme weather, and even cyber threats. It doesn't matter how advanced or well-funded an airport is. When the grid goes down, even the most sophisticated backup systems can fail.

That's where S4GA's Solar Airfield Lighting comes in - providing critical support to airports during unexpected disruptions such as power outages. As a backup system, Solar AGL helps airports minimize costly delays, avoid flight cancellations, and maintain service continuity.

Heathrow: A Wake-Up Call for Airports Worldwide

On March 21, 2025, Heathrow Airport—the UK's busiest aviation junction - was brought to a standstill. The result: total suspension of flights, logistical chaos, and losses estimated at over £100 million. Airlines, passengers, and airport authorities were all caught off guard.

The fire at the North Hyde substation cut power to Heathrow's terminals and control systems. The main backup generator was also affected, and the airfield lighting systems could not be fully restored in time to maintain safe operations.While operations resumed the next day, the financial losses and reputational damage were already done. The incident exposed a glaring vulnerability: a single point of electrical failure can paralyze even the most refined airport systems.



Fire that paralyzed Europe's largest airport.
Image source: bbc.com

Unfortunately, this wasn't the only major disruption in the past year.

Europe's Biggest Blackout in Over 20 Years

On April 28, 2025, Spain, Portugal, and parts of France were plunged into chaos by a massive blackout - the region's worst in over two decades. Entire populations were left without electricity, prompting a rush for battery-powered radios in a desperate search for updates.

Despite the usual resilience of Europe's power grid, the failure lasted for hours, disrupting daily life, halting businesses, and affecting transportation systems, including local airports. Around 96 departing flights were grounded across Portuguese airports, with Lisbon - the capital - being the hardest hit. In Spain, 45 flights were canceled, primarily affecting the major airports in Barcelona and Madrid.

ICAO's Guidance in Response to Blackouts

ICAO, the leading international agency for air navigation safety, actively monitors the global energy grid situation to help airports mitigate blackout risks and respond effectively. ICAO's EUR Doc 031 - Crisis Management Framework Document - defines what constitutes an airport power loss, outlines potential causes, and, most importantly, provides guidance on maintaining operational continuity during such events.

The document advises countries and aviation organizations to develop contingency plans that ensure the uninterrupted delivery of critical aviation services. These plans must incorporate robust, resilient systems capable of withstanding widespread power grid failures. Traditional solutions like UPS and diesel generators are not sufficient to cover large-scale disruptions, such as the pan-European blackout experienced in April.

Adding Redundancy with S4GA's Solar Backup AGL

By installing S4GA's solar lights as a backup system, airports gain immediate redundancy. If the main power grid fails, the airfield lights stay on. Solar lights can be switched on instantly - no generators, no delays - ensuring the airport remains operational and protected from major losses. Once installed, the system is always ready to serve as your plan B.

S4GA solar backup airfield lighting system installed at Sangster International Airport, Jamaica

During events like the Heathrow blackout, that reliability can be the difference between smooth continuity and complete shutdown.

Solar AGL: The Smart Investment That Saves Millions

S4GA's Solar Airfield Lighting **prevents airports from massive financial losses** caused by flight cancellations during power outages. At Heathrow, a recent power outage resulted in **over £100 million in losses within just a few hours**. That's precisely the scale of loss that solar lighting can help prevent.

Importantly, the long-term investment in solar airfield lighting - designed to last for decades - is only a fraction of the losses a major airport would incur during a single power failure. With instant, off-grid lighting support, S4GA ensures uninterrupted operations and safeguards airport revenue in any emergency.

Backup in Motion at Airports Worldwide

A growing number of airports are exploring solar airfield lighting as a reliable backup, and many are already making the investment. It's a practical, cost-effective solution that delivers immediate value. Take Sangster International Airport in Montego Bay, Jamaica: one of the busiest hubs in the Caribbean, it now maintains airfield operations during blackouts thanks to S4GA's solar-powered backup AGL.

The airport opted for a fixed solar system that requires no additional setup during emergencies - it's ready to activate instantly. With minimal maintenance needs, the airport team can focus on resolving critical issues without worrying about lighting disruptions - and you can do it, too.

Safe landing with the S4GA solar-powered backup AGL

Do You Have a Plan B?

The Heathrow blackout is a warning shot. Airports are critical infrastructure and must be equipped to withstand power disruptions. Installing Solar Airfield Lighting as a backup system is a straightforward, effective step toward operational resilience.

Is your airport ready for disruptions? Contact Us to prepare for emergencies.