



S4GA solar runway lighting installed next to fixed conventional lighting as a backup

One Technology, Different Applications – S4GA Solar Airfield Lighting

Different airports – from international hubs to local airstrips – face unique tasks, challenges, and operational conditions. Yet they all share common demands: meeting low-carbon targets, complying with regulations, and remaining functional during emergencies. And above all, they must ensure safe and comfortable flights for their passengers.

To meet all these demands, many airports are turning to solar-powered solutions – a durable, flexible system that adapts to specific operational requirements. Below, we explore how S4GA's solar airfield lighting fits into key airfield lighting applications, with real-world examples from airports that have successfully implemented these solutions.

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- Permanent Airfield Lighting for Civilian Low-Traffic Airports
 - Military Airfield Lighting
 - Mining Airstrips
 - Backup Runway Lighting for International Airports
 - Solar Taxiway Lighting

Permanent Airfield Lighting for Civilian Low-Traffic Airports

Runway lighting is critical for safe operations, but wired systems are often vulnerable to power outages, cable damage, and equipment failure – issues that can disrupt service and lead to costly delays.

Regional and municipal airports choose S4GA solar airfield lighting because it addresses these vulnerabilities. Each light is powered by its own solar panel and includes a backup battery, functioning independently of the grid. This setup not only offers continuous operations but also reduces costs compared to traditional systems and significantly lowers [CO₂ emissions](#).

“ The S4GA Permanent Solar AGL System is really straightforward to install. We didn't need any specialized contractors, so it fit perfectly with our team and saved us money.

The maintenance is also simple and doesn't cost much. The solar power means we don't have to do a lot of upkeep, and it keeps running reliably. Overall, it's been a great choice for updating our airport without breaking the bank. **”**

- **m.sc.eng. Nedko Todorov, Project Manager at STRAPLAN**

Airports such as [Campbeltown](#) in Scotland, [Elliot Lake Airport](#) in Canada, and [Tefe Airport](#) in Brazil have successfully adopted S4GA's permanent solar airfield lighting systems, proving the solution's effectiveness in a range of environments.



S4GA solar airfield lighting at Campbeltown Airport in Scotland, UK

Military Airfield Lighting



Deployment of S4GA solar airfield lighting, Africa

Military airbases often operate in remote locations where access to grid power is limited or nonexistent. In such settings, solar airfield lighting becomes a practical, long-term solution.

S4GA's solar-powered lighting systems enable safe runway operations year-round, independent of external energy sources. These systems are especially valuable in Africa, where numerous remote US military airbases [have implemented S4GA solar airfield lighting](#) for seamless long-term use and **resistance to electronic warfare**. With continuous 24/7 functionality and minimal maintenance, solar airfield lighting supports mission-critical reliability in isolated or tactical environments.

Additionally, S4GA can deliver and deploy a complete solar airfield lighting system to a military base within just a few months. There's no need for trenching or extensive cabling — and the troops can set up the system themselves. This **rapid delivery and setup** capability is especially crucial for urgent or time-sensitive missions.

Beyond power independence and quick deployment, this solar lighting solution is equipped with advanced control and monitoring that allows **real-time oversight of every individual light** — ensuring maximum operational awareness and fast response without having to check the lights in person, which is perfect in high-threat environments.

"S4GA's solar airfield lighting system proved to be a reliable and efficient solution for military use. The Republic of Singapore Air Force successfully implemented it at Pulau Sudong Airfield, integrating it with existing infrastructure and relying on our team for full support."

- Commanding Officer, Singapore Air Force

Mining Airstrips

Mining airstrips are often located in remote, harsh environments with no access to grid power. These sites require reliable lighting systems for critical night flights transporting personnel and equipment.

S4GA systems are already used at mining sites in [Australia](#), [Africa](#), and [Canada](#), proving their durability and performance under extreme conditions. They support safe airfield operations while helping mining companies [meet sustainability goals](#) by reducing emissions.

Thus, S4GA solutions contribute to broader sustainability goals, including cleaner operations and reduced greenhouse gas output. This makes them not only a practical choice but also a strategic investment for companies aiming to align with stricter environmental regulations and ESG commitments.



S4GA solar airfield lighting installed at West Musgrave Airport, that serves one of Australia's most remote mining sites

“ Since the latest onset of reliable Solar and battery powered systems, we now have a new weapon in our arsenal to offer mines that can give them all the safety barriers that they require. Whether it is a reliable permanent Solar lighting system for the Airport or a backup portable trailer solution that stands ready if there is an outage or failure, Solar and Battery powered Lighting solutions are proven to be reliable and available to solve the problems and ultimately save the company money. **”**

- **Stephen Leadbetter, Approach Navigation Systems (ANS), Canada**

Backup Runway Lighting for International Airports

Backup runway lighting serves as a secondary system that takes over when the primary one is unavailable due to failures or emergencies. It must be reliable, instantly available, and fully compliant with aviation standards.

Major international airports are adopting solar airfield lighting as a backup solution because it **aligns with safety protocols**, sustainability goals, and ICAO recommendations. At [Sangster International Airport](#) in Jamaica, operated by [GAP](#), S4GA solar runway lighting supports the existing wired infrastructure. The system requires no setup and **activates instantly**, ensuring uninterrupted operations during outages or emergencies. With a simple switch, the lights are ready to guide aircraft safely during takeoffs and landings.

" Great to see S4GA solar lighting in action at Sangster International Airport – a reliable backup system that's easy to deploy and supports GAP's green goals.

Instead of a trailer or complex wired backup, the airport chose our ICAO-compliant solar runway lights as a long-term backup system. Why? Because they're fast to deploy, require no extra setup, and can be activated instantly when needed. **"**

- **Dmytro Kuczeruk, Business Development Manager at S4GA**



S4GA solar airfield lighting at Sangster International Airport, Jamaica

Solar Taxiway Lighting

Maintaining safe aircraft movement on taxiways – especially during night operations or low-visibility conditions – requires reliable, clearly visible lighting. However, installing or upgrading traditional taxiway lights often involves extensive trenching, cabling, and power supply coordination, making it slow, costly, and disruptive. S4GA's solution? [Solar taxiway lighting](#).

Fully ICAO- and FAA-compliant, these lights **operate independently on solar power** and require no external infrastructure.

The technology is especially popular among airport authorities managing large airside or multiple taxiways, including national hubs and military bases.



S4GA solar taxiway lighting installed at an international airport

S4GA Solar Airfield Lighting – The All-in-One Answer

From regional airports and remote military airbases to international hubs managing large-scale upgrades, S4GA's solar airfield lighting adapts to diverse operational needs. Its smart design, **autonomous power supply**, and **compliance** with global aviation standards make it a trusted tool for both permanent and temporary applications. Whether maintaining continuity during outages, supporting construction projects, or **enhancing safety**, solar airfield lighting offers a smart, segment-specific approach airports can rely on.

[Contact Us](#) to discover how S4GA can address your airport's needs.