How Airports Can Rebound and Expand with Efficient Lighting Upgrades

The guide on cost-effective ways to perform large-area upgrades to LED lighting

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Cost Reduction: The New Normal for Airports?

After months of uncertainty, things are looking up for the aviation industry. With vaccinations on the rise and travel restrictions being eased, some experts think that air travel could make a recovery by late 2021[1]. Domestic air travel for the U.S. is predicted to normalize by 2022 and return to pre-pandemic levels the following year[2].

Airports are again ramping up operations, but many are doing so with measures in place to streamline operations. The pandemic has made airport operators cost-conscious and attentive about unnecessary expenditure that could impact financial recovery for the coming months.

One area of scrutiny is airport lighting. Specifically, large areas like aprons, ramps and de-icing pads – most of them are still illuminated with inefficient and costly High-Pressure Sodium (HPS) or High Intensity Discharge (HID) bulbs. To lower energy and maintenance costs, forward thinking airports have begun making the transition to energy-efficient LEDs.

Would that really make a difference in the long-term? When Terminal One at John F. Kennedy International Airport (JFK) switched their high mast apron lights to LED*, they achieved:

65%
less energy consumption

$47,686
annual energy savings

*Read the full case study on page 8

Imagine these results replicated in other large areas of an airport. But the benefits aren't just limited to sustainability and energy efficiency. Reduced glare and crisp white light from well-angled LEDs also raise the level of work safety and accuracy for pilots and ground crew.

In this resource, we present several ways airport operators can perform or plan for cost-effective lighting upgrades. You'll learn:

- Four lighting considerations to improve the long-term safety, energy-efficiency and cost savings of airport operations
- The many ways choosing the right lighting solutions provider makes your lighting upgrades easier
- Real examples of how LEDs lower energy consumption and improve the operations of airports like yours

[1] https://www.wsj.com/articles/what-to-expect-from-travel-in-2021-if-anything-11609941849
[2] https://www.flightglobal.com/strategy/us-domestic-air-travel-to-normalise-by-2022-report/143181.article

The Impact of Lighting Upgrades on Common Cost Areas

The ubiquity and importance of lighting, especially for large areas like aprons and ramps, makes it one of the biggest cost centers for modern airports. Step improvements to lighting control and efficiency, no matter how small, could potentially ripple into long-term financial benefits for today's airports.

Here are the common cost areas for airports that will benefit from a shift to LED:

Avoidable accidents	The clearer visibility and reduced glare from LEDs equipped with precise optics allow pilots and ground crew to better spot and react to dangerous obstacles in their path. This prevents costly incidences from happening.
Monthly maintenance	Traditional high mast HPS and HID bulbs need replacing every 4 years and ballasts every 5 to 6 years. Switching to LED could potentially slash maintenance costs by 75%, because you'll no longer need to pay for new bulbs, ballasts and labor.
Energy consumption	Due to their higher lumen output, LED fixtures have better energy-efficiency than traditional HPS and HID lights. Under certain factors, you might even require fewer LED fixtures to replace traditional lights, but still get optimal lighting levels and coverage over a wide area.
Inefficient control of lights	The inefficient and unreliable control of high mast lights via photocells and timers represent a significant source of wasted energy for airports. With airlines operating on a reduced frequency for the foreseeable future, wireless lighting controls would be a sensible investment for any airport operator looking to reduce monthly energy costs.

Get support from a lighting expert

Discover how Phoenix Lighting can assist the rollout of your lighting upgrade project by providing quality large-area LED technology and turnkey installation solutions that meet your safety, budgetary and return on investment goals.

Turn to page 6, **Partner with A Proven Aviation Lighting Solutions Provider** to learn about the Phoenix Lighting advantage

Four Things to Consider When Planning Your Lighting Upgrades

Whether you're looking to undertake your lighting upgrade project with an in-house team or with an engineering firm, here are four fundamental things for you to consider before embarking on much needed large area lighting upgrades for your airport.

1

Commit to a long-term plan for LED transition

Besides improvements to safety and energy costs, airports have another strong reason to make the switch to LED. Most lighting manufacturers in the U.S. have ceased production of HPS and HID components in the past 4 years, meaning replacement bulbs or ballasts are harder to source locally and must be shipped from manufacturers abroad.

This is both cost and time prohibitive, due to today's smaller budgets and vulnerable global supply chains. The transition to readily available, locally manufactured LEDs allows airports to retain the integrity and stability of future operations.

2

Leverage available federal grants and stimulus funds

Multiple grants like the $2 billion US DOT grant[3] and increased Airport Improvement Program (AIP) funds[3] are being made available to airports nationwide. These grants and stimulus funds are an excellent opportunity for airport operators to finance improvements to safety, security and infrastructure like large area lighting, as flights resume.

Some lighting solutions providers, like Phoenix Lighting, could also provide consultation and screening of your application. Tap into their experienced advice to improve your chances of winning desired federal grants or funding.

[3] https://www.flyingmag.com/story/news/dot-two-billion-dollar-airport-relief-grant/
[4] https://www.internationalairportreview.com/news/155785/us-faa-award-funding-airport-improvement/

3

Consider technologies like wireless lighting controls

They may require upfront investment, but best-in-class wireless lighting controls can deliver over 30% energy savings in the long run, while extending the lifespan of your high mast LED fixtures. Some solutions come with software that allows remote monitoring, dimming by zone and automated light scheduling.

This solution gives airport operators flexibility over their lighting schedules, especially during irregular operations and schedule changes. They can wield finer control over energy costs by easily dimming or turning LEDs off in quiet zones, while keeping them on at areas of high activity.

4

Choose a proven lighting solutions provider

Because their LED solutions and technology will heavily influence the safety and efficiency of your operations, carefully consider your choice of lighting solutions provider. Study their track record and consider their experience with other airports or engineering firms. Evaluate not just their pricing and range of solutions, but also the quality of their customer service.

Leading solution providers would aim to understand your lighting needs, customize their solution to meet your budget, and provide additional support – like sourcing of equipment, poles and project management capabilities – for your project.

Partner with A Proven Aviation Lighting Solutions Provider

Phoenix Lighting has decades of experience designing and manufacturing durable LED fixtures and lighting controls that improve safety and visibility for harsh and large area environments. We've worked with multiple airports and installed LED technology for outdoor large areas like ramps, aprons, de-ice pads and cargo loading, as well as indoor lighting for baggage handling and terminals.

If you're an airport operator:

Our team of lighting experts can help you create a lighting upgrade plan, procure required LED fixtures, and project manage installation. You'll also get the best in aftersales support in the industry.

If you're an engineering firm:

We can provide LED high mast lighting that meet your project's budget, plus additional assistance like technical specifications on poles, wiring, installation and project management.

Optimize Your Lighting Project with Our Turnkey Large Area Lighting Package

Partnering with us doesn't just give you best-in-class LED fixture technology, but also access to an entire ecosystem of lighting services. Our Large Area Lighting Package is designed to be fully customizable according to the requirements of your lighting project.

What comes with the Phoenix Large Area Lighting Package?

Design and engineering services	We provide initial planning groundwork for your project, including lighting simulations, structural review and design, and professional engineer sign-off on the above documents.
Customized solutions	Our complete scope of LED fixtures can be customized-to-order within reasonable volume, as well as wireless lighting controls that are ready to integrate with your lighting systems.
Project management services	We can deploy a team of experts, led by qualified project managers to your site to help keep installation on schedule and hassle-free for your engineering team.
Delivery and Installation Services	We can procure and ship the required number of fixtures, rings, and poles in your plan, to your site to ensure minimal disruption to your operations. We also provide technicians for installation or as assistance to your preferred contractor.
Comprehensive Warranty and Support	Standard warranty options begin at 5 years with extended warranties also available. There are no limitations or third parties: **deal directly with us, the lighting manufacturer.**

Raising Lighting Efficiencies for John F. Kennedy International's Terminal One

As the primary international airport for New York city and the fifth busiest airport in the United States, John F. Kennedy International needed more reliable LED fixtures to replace aging high mast 1000W HPS floodlights at their Terminal One apron.

Phoenix Lighting worked with JFK to retrofit the HPS lights with 500W Highland® Series high mast fixtures, which require less than half the energy but delivered improved levels of performance, durability and reliability over the older fixtures. Integrated glare shields also reduced vertical and horizontal glare for pilots and ground crew, improving safety for this busy airport.

Every high mast LED was connected to Phoenix's integrated Lighting Intelligence Technology (LIT) system, allowing fine manual or automated control over the entire apron. The resulting energy savings for JFK were significant:

65%
less energy consumed

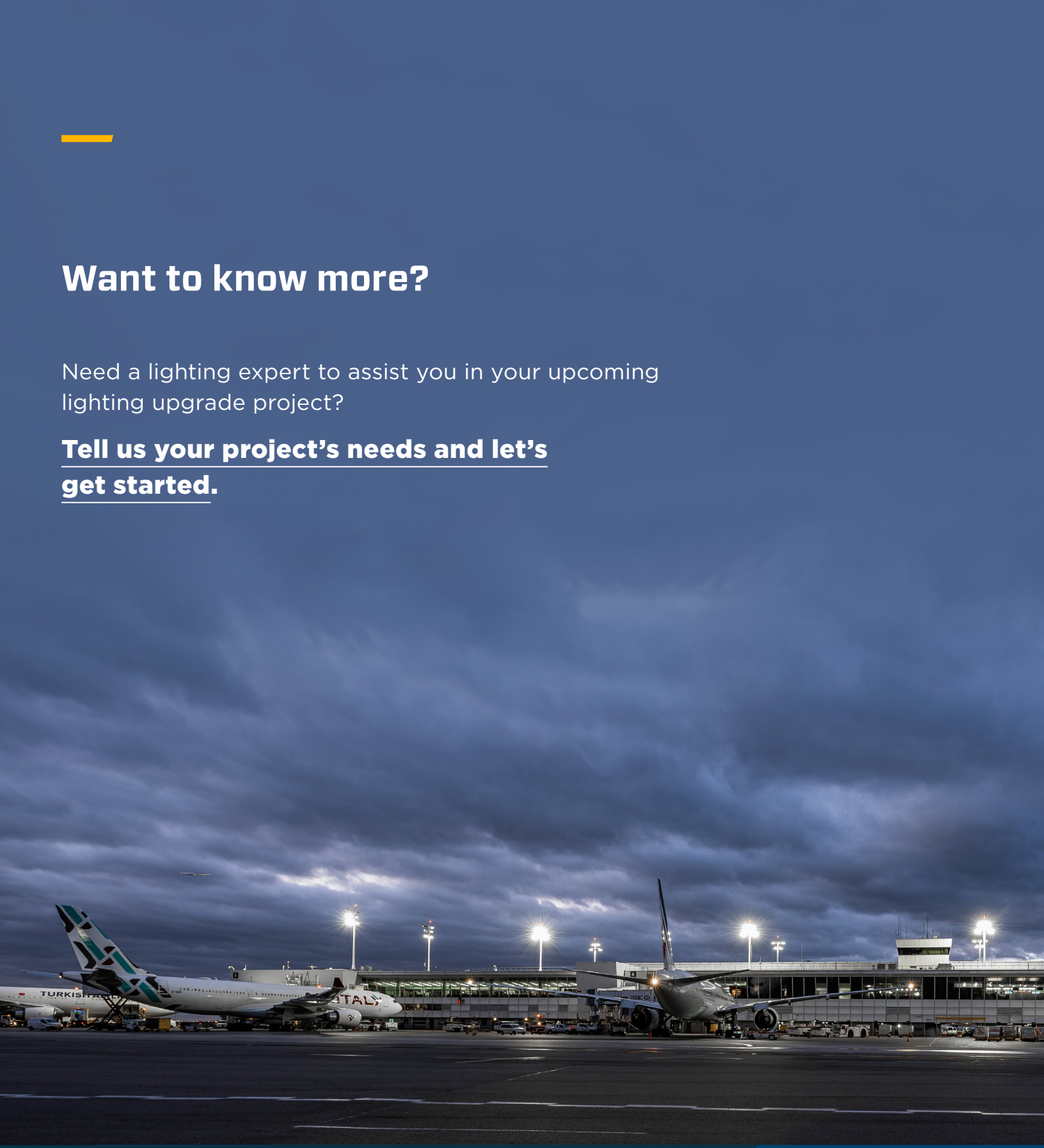
290,766kWh
of electricity saved

$47,686
annual energy savings

Want to know more?

Need a lighting expert to assist you in your upcoming lighting upgrade project?

Tell us your project's needs and let's get started.



About Phoenix Lighting

We're a recognized and proven lighting manufacturer and solutions provider that have delivered projects for airports and air bases across the United States. Our customers have received excellent performance and energy savings from durable high mast LED fixtures, floodlights and lighting controls. These lights have illuminated other equally punishing environments, such as port terminals, mine sites, industrial facilities, warehouses, military bases and federal infrastructure.

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