



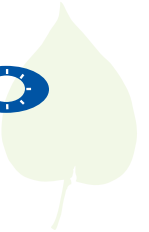
**AIREKO**  
energy solutions

Plan it. Build it. Service it.

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**AIREKO**  
energy solutions





**Energy efficiency and reduction in operational costs is becoming critical in the energy driven industry. Our clients are benefiting from Aireko's experience in energy efficient technology and implementation.**





Over 100  
industrial sites  
through Puerto  
Rico and the  
Caribbean

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One of the  
leading  
consultants  
in energy  
efficiency

**Aireko Energy Solutions** specializes in reducing the operation costs of clients through energy conservation technologies. We bring a unique combination of multi-disciplinary skills that range from engineering and installation to financial analysis and support. These skills and work ethic are the driving engines behind our success.

Our solutions bring several benefits to our clients aside from the reduced energy costs, such as [cash flow improvement](#), [better aesthetics throughout the facility](#), [employee production & better public image of the company](#) by [reducing CO2 emissions and other greenhouse gases](#).

# Energy Conservation Measures

## Building Envelope

For some buildings, the envelope (i.e., walls, roofs, floors, windows, and doors) can have an important impact on the energy used to condition the facility.

## Electrical Systems

For most commercial buildings and a large number of industrial facilities, electrical energy cost constitutes the dominant part of the utility bill. Lighting, office equipment, and motors are the electrical systems that consume the major part of energy usage in commercial and industrial buildings.

## Motors

The energy cost to operate electric motors is a significant part of the operating budget of any commercial and industrial building. Measures to reduce the energy cost of using motors include reducing operating time (turning off unnecessary equipment), optimizing motor systems, using controls to match motor output with demand, using variable speed drives for air and water distribution, and energy-efficient motors.

## HVAC Systems

Energy use, due to HVAC systems, can represent over 40% of the total energy consumed by a typical commercial building. We obtain the characteristics of major HVAC equipment to determine the condition of the equipment, its operating schedule, its quality of maintenance, and its control procedures.

## Lighting

Lighting for a typical office building represents, on average, 40% of the total electrical energy use. There are a variety of simple and inexpensive measures to improve the efficiency of lighting systems. These include the use of energy-efficient lighting lamps and ballasts, the addition of reflective devices, de-lamping (when the luminance levels are above the recommended levels by the standards), and the use of day lighting controls. Most lighting measures are especially cost-effective for office buildings for which payback periods are often less than 1 year.

## Compressed Air Systems

Compressed air has become an indispensable tool for most manufacturing facilities. Its uses range from air-powered hand tools and actuators to sophisticated pneumatic robotics. Unfortunately, staggering amounts of compressed air are wasted in a large number of facilities. It is estimated that only about 20 to 25% of input electrical energy is delivered as useful compressed air energy. Leaks are reported to account for 10 to 50% of the waste while misapplication accounts for 5 to 40% of the loss of compressed air.

## Boilers & Steam Generation Systems

Boilers & Steam Generation System upgrade and retrofit capabilities increase boiler efficiency. These services include Change Fuel Type/Lower Fuel Costs/Lower Emissions, new or modified Advanced Integrated Controls Systems, and Heat Recovery options. Aireko's team also provides a comprehensive cost analysis outlining the savings that could be achieved.

## Energy Management Controls

As a result of the steady decrease in the cost of computer technology, automated control of a wide range of energy systems within commercial and industrial buildings is becoming increasingly popular and cost effective. An energy management and control system (EMCS) can be designed to control and reduce the building energy consumption within a facility by continuously monitoring the energy use of various equipment and making appropriate adjustments.

# Renewable Energy Projects

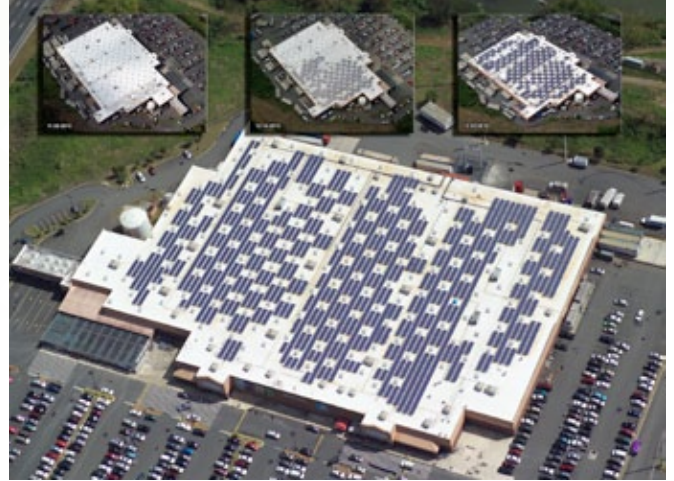
## (PV SYSTEMS)

### **Wal-Mart Supercenter, Caguas, PR**

747 kW Solar Electric System

The 1st Caribbean store to receive the PV system as part of a Power Purchase Agreement between SunEdison and Wal-Mart, PR.

Aireko Energy provided all labor and material for the 747 kW Solar Electric System. The installation included close coordination with the store management team to confirm locations of existing structure joists for new PV column supports.



### **Sam's Club Rexville, Bayamon, PR**

579 kW Solar Electric System

PV system Power Purchase Agreement between SunEdison and Wal-Mart, PR.

Aireko Energy provided all labor and material for the 579 kW Solar Electric System. The installation included close coordination with the store management team to confirm locations of existing structure joists for new PV column supports.







### **Onofre Carballeira Sports Complex, Bayamón Solar Zone, Bayamón, PR**

587.19 kW Photovoltaic System

Design, build and commissioning of the municipality's flagship solar energy project at the Onofre Carballeira Sports Complex. The design-build contract consists of a 584 kW photovoltaic system that will follow the instructions and specifications of the Energy Efficiency and Conservation Block Grant, which will make it possible for the Municipality to use Federal ARRA funds for this alternate energy source.



### **Janssen Ortho, Gurabo, PR**

15 kW Photovoltaic System

Design, build and commissioning of a 15 kW photovoltaic system for this pharmaceutical company located in Gurabo, Puerto Rico. Power consumed by a warehouse located on the Gurabo campus will be generated by this 15 kW system. (Installation - all equipment furnished by Owner)

## **Aireko Main Office, Caguas, PR**

260 kW Photovoltaic System

Design, build and commissioning of a 260 kW photovoltaic system for Aireko's main office located in Bairoa Industrial Park Caguas. The design-build system consisted of a 260 kW photovoltaic system installed in two phases. Tax incentive through Law 248 funded 75% of the total project cost.



# Other Projects

## **Museo de Vida Silvestre**

115 kW PV System

## **Minillas Government Building Performance Contract**

18.74 kW PV Systems and Capacitor Bank

## **Barbados National Oil Company**

34 kW PV System

## **La Fondita de Jesús**

Lighting Retrofit

## **Cuartel Ballajá**

Lighting and HVAC Retrofit, PV System

## **Oficina de Etica Gubernamental**

291 kW PV System



Cuartel de Ballajá



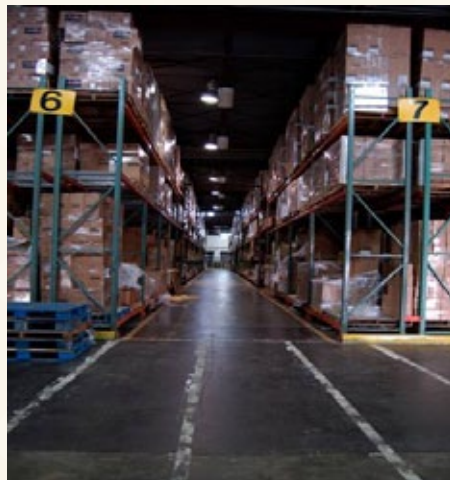
Cuartel de Ballajá

# Energy Efficiency

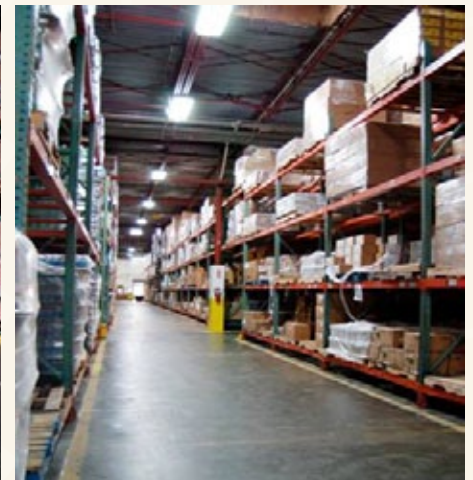
## REFERENCE PROJECTS

CLIENT	AFI SUBMITTED SAVINGS/ MONTH	ACTUAL AVG SAVINGS/ MONTH	% ACHIEVED	\$ SAVED/ MONTH
<b>Air Master Windows &amp; Doors</b> Lighting retrofit & Controls, HVAC retrofit	<b>24,922</b>	<b>27,350</b>	<b>109.74%</b>	<b>\$7,111.00</b>
<b>Plaza Food Systems</b> Lighting retrofit & Controls	<b>27,102</b>	<b>26,915</b>	<b>99.31%</b>	<b>\$5,383.00</b>
<b>Los Cidrines</b> Lighting & HVAC Retrofit	<b>19,284</b>	<b>19,800</b>	<b>102.68%</b>	<b>\$5,148.00</b>
<b>Polytechnic University</b> Lighting retrofit & Controls, HVAC retrofit	<b>35,278</b>	<b>55,162</b>	<b>156.36%</b>	<b>\$14,342.01</b>

Plaza Food Systems  
Lighting retrofit



Before



After

“Maybe some of you remember that when I was here in 2008, I spoke in front of the Cuartel de Ballajá, a site that had been home to so many chapters of Puerto Rican history.

**Today, Puerto Rican workers are writing the next chapter by turning the building into a model of energy efficiency. They’re making HVAC systems more efficient. They’re putting on a green roof. They’re installing 720 photovoltaic panels. When they’re done, it’s estimated that the energy savings will be 57 percent. And Puerto Rico will have taken one more step towards creating a clean energy economy.”**

## **AIREKO RECOGNIZED**

Barack Obama, President of the United States

REMARKS BY THE PRESIDENT AT A WELCOME EVENT.  
LUIS MUÑOZ MARÍN INTERNATIONAL AIRPORT  
SAN JUAN, PUERTO RICO  
JUNE 14, 2011





**CENTRAL OFFICE**

Caguas, PR

**SATELLITE OFFICES**

Ponce, PR

Guaynabo, PR

San José Costa Rica

tel 787.653.4700 fax 787.653.0122 | P.O. Box 2128, San Juan, PR 00922-2128  
[www.aireko.com](http://www.aireko.com)

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### **Wal-Mart Supercenter, Caguas, PR**

The 1st Caribbean Wal-Mart store to receive the PV system as part of a Power Purchase Agreement between SunEdison and Wal-Mart, PR. Aireko was responsible for all field coordination, steel support system, labor and material for the 747 kW Solar Electric System. The installation included close coordination with the store management team to confirm locations of existing structure joists for new PV column supports.

**Contract Amount:** \$ 1,424,000

**Completed:** 2010

(PV Modules and equipment furnished by Owner)



### **Aireko Main Office 260 KW Photovoltaic System, Caguas, PR**

Design, build and commissioning of a 260 KW photovoltaic system for Aireko's main office located in Bairoa Industrial Park Caguas. The design-build system consisted of a 260KW photovoltaic system installed in two phases. Tax incentive thru Law 248 funded 75% of the total project cost.

**Contract Cost:** \$1,987,500.00

**Completed:** 2009



### **Onofre Carballeira Sports Complex 587.19 KW Photovoltaic System Bayamón Solar Zone, Bayamón, PR**

Design, build and commissioning of the municipality's flagship solar energy project at the Onofre Carballeira Sports Complex. The design-build contract consists of a 584KW photovoltaic system that will follow the instructions and specifications of the Energy Efficiency and Conservation Block Grant, which will make it possible for the Municipality to use Federal ARRA funds for this alternate energy source.

**Contract:** \$3,783,000.00

**Completed:** 2009



### **Museo de Vida Silvestre, San Juan, PR**

Design, build and commissioning of a 115.2 KW photovoltaic system for the Museo de Vida Silvestre located in San Juan, Puerto Rico.

**Contract Amount:** \$639,590.00

**Completed:** 2011



### **Cuartel de Ballajá, San Juan, PR**

Design, build and commissioning of a 151.2 KW photovoltaic system, Lighting Retrofit, Controls & HVAC Retrofit for this historic building located in Old San Juan, Puerto Rico. This is part of the ongoing projects at Ballajá under Aireko Energy Solutions to transform into Ballajá into an efficient building.

**Contract Amount:** \$526,414.00

**Completed:** 2011



### **Janssen Ortho 15 KW Photovoltaic System, Gurabo, PR**

Design, build and commissioning of a 15 KW photovoltaic system for this pharmaceutical company located in Gurabo, Puerto Rico. Power consumed by a warehouse located on the Gurabo campus will be generated by this 15 KW system.

(Installation – all equipments furnished by Owner)

**Contract Amount:** \$60,000

**Completed:** 2010



### **Sam's Club Rexville, Bayamon, PR**

PV system Power Purchase Agreement between SunEdison and Wal-Mart, PR. Aireko Energy provided all labor and material for the 579 kW Solar Electric System. The installation included close coordination with the store management team to confirm locations of existing structure joists for new PV column supports.

**Contract Amount:** \$1,082,730.00      **Completed:** 2011



### **Etica Gubernamental, San Juan, PR**

Installation and Comissioning of a 291 kW PV System. Aireko Energy provided all labor and project management for the Solar Electric System.

**Contract Amount:** \$649,250.00      **Completed:** 2011