



ICAO

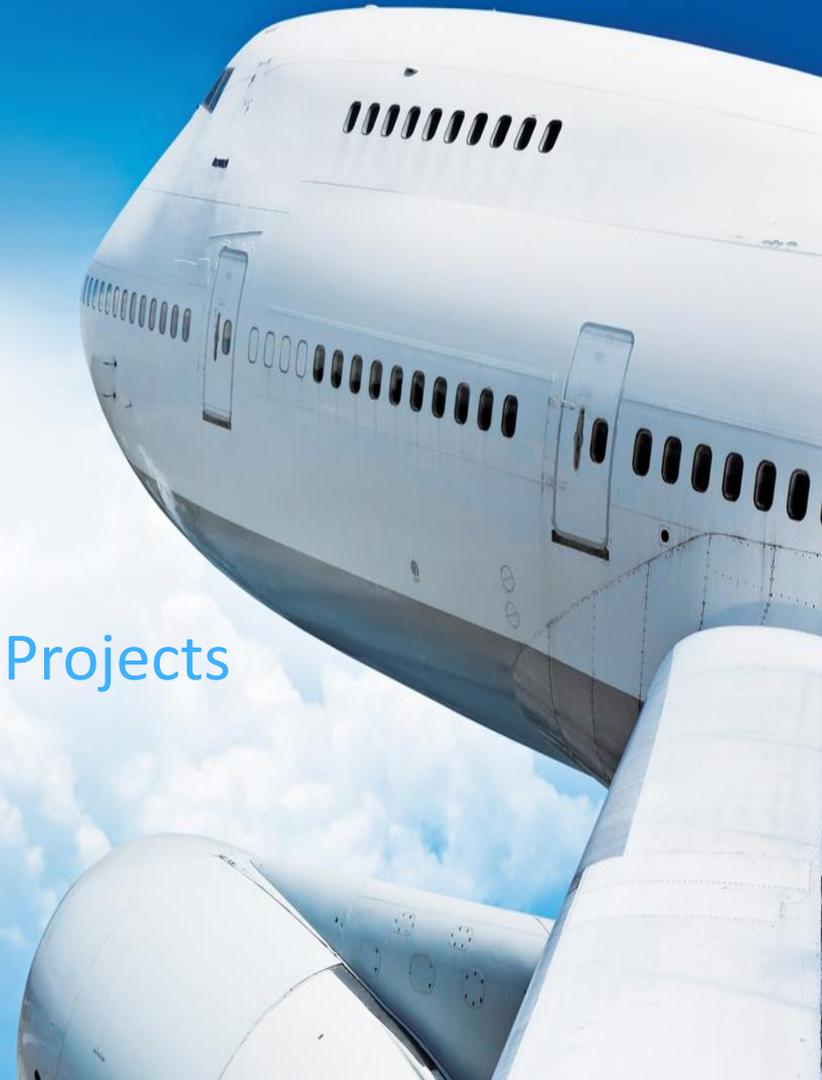
ENVIRONMENT

ICAO SEMINAR ON  
**GREEN AIRPORTS**

# Decarbonizing Gate Emissions with Solar Power

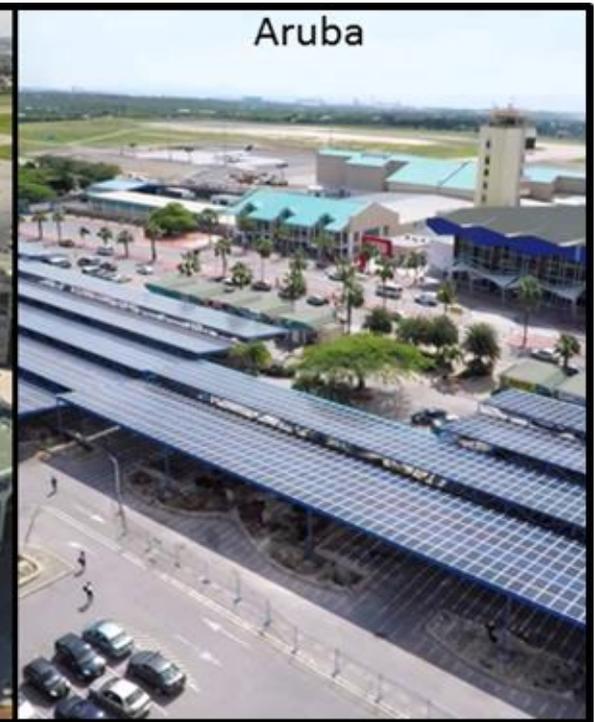
**Stephen Barrett**

ICAO Technical Consultant to the  
UNDP/GEF and EU Joint Assistance Projects



# Solar matches well with airports

open space, flexible design, low profile





ICAO

ENVIRONMENT

ICAO SEMINAR ON  
**GREEN AIRPORTS**



**However, must still site for safety**  
avoid airspace impingement, radar interference, glare

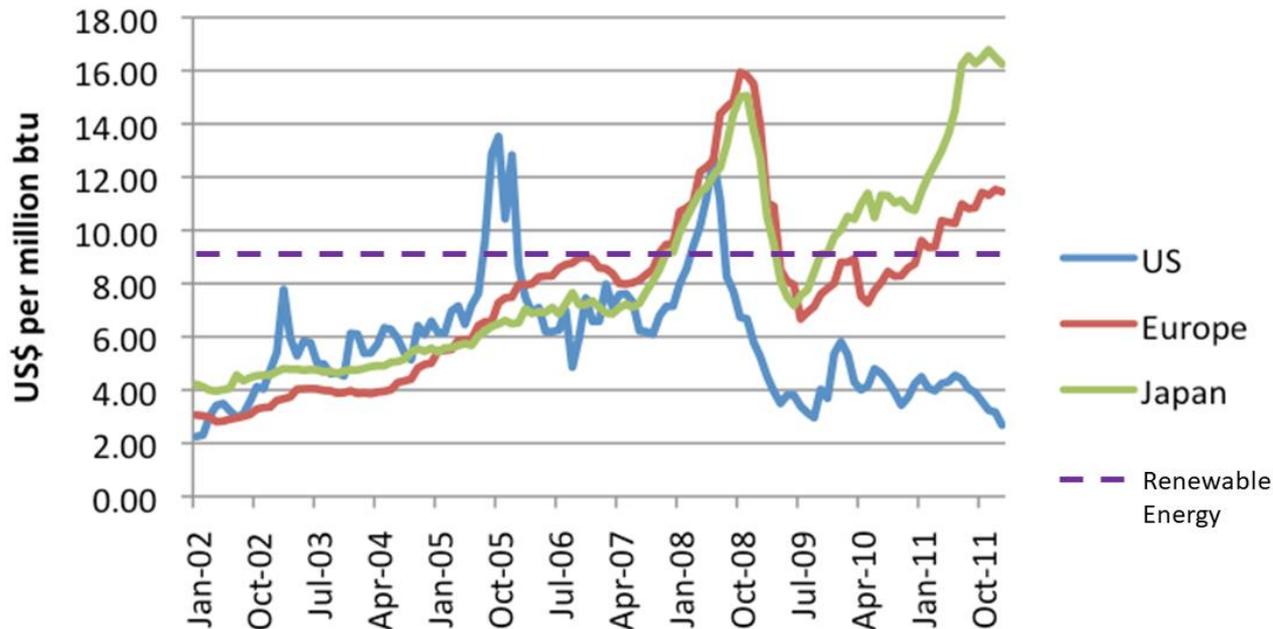


**MONTREAL, CANADA, NOVEMBER 29-30, 2017**

# Clear cost advantages

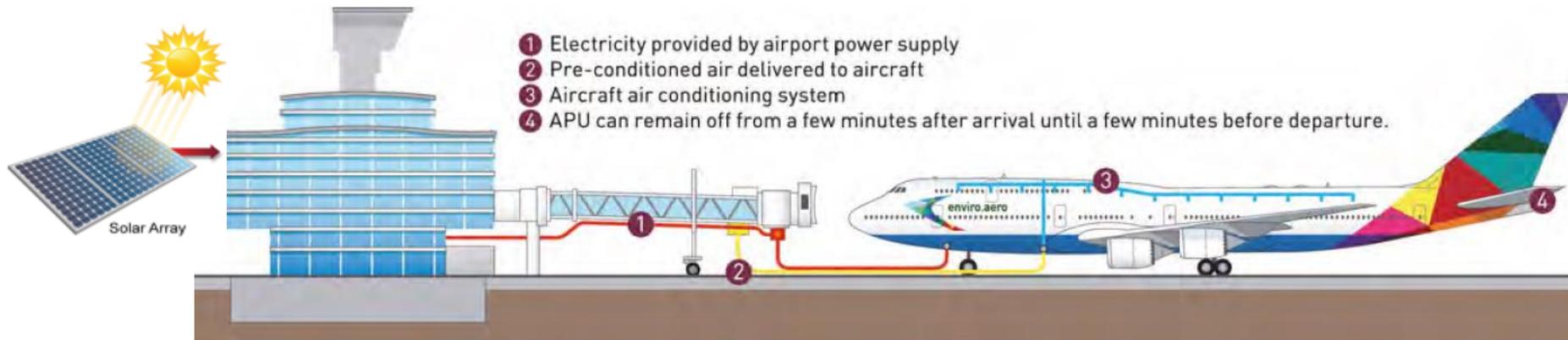
## stable and predictable price and supply

### Natural Gas Prices in US, Europe, Japan



# Clean Development Mechanism

## Solar Power for At-Gate Operations





ICAO

ENVIRONMENT

ICAO SEMINAR ON  
**GREEN AIRPORTS**

# Jamaica Solar at-Gate Pilot Project

Implemented in cooperation with the UNDP and funded by the Global Environment Facility (GEF)

## Solar Canopy



## PCA and 400 Hz GPU



MONTREAL, CANADA, NOVEMBER 29-30, 2017



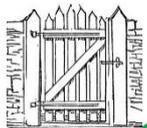
ICAO

ENVIRONMENT

ICAO SEMINAR ON  
**GREEN AIRPORTS**

# Kingston and Montego Bay Airports

ICAO UNDP



Private



MONTREAL, CANADA, NOVEMBER 29-30, 2017



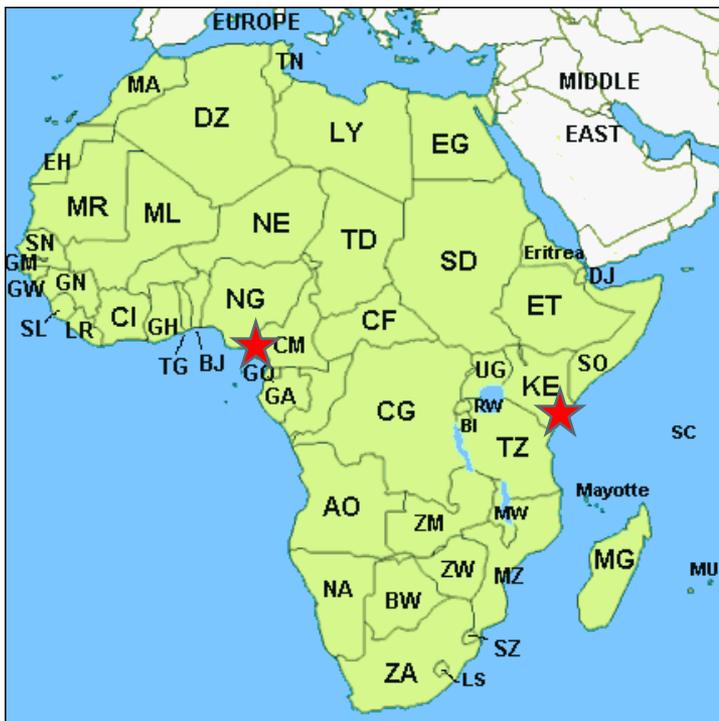
ICAO

ENVIRONMENT

ICAO SEMINAR ON  
**GREEN AIRPORTS**

# ICAO EU Assistance Project

## Solar Power Pilot Projects



MONTREAL, CANADA, NOVEMBER 29-30, 2017



ICAO

ENVIRONMENT

ICAO SEMINAR ON  
**GREEN AIRPORTS**

# Douala, Cameroon

## 1 MW of Solar / Gate Electrification provided by the CAA



PROJECT FUNDED BY



European Union

MONTREAL, CANADA, NOVEMBER 29-30, 2017

# Mombasa, Kenya 0.5 MW Solar, Gate Equipment and Battery Storage

PROJECT FUNDED BY



European Union

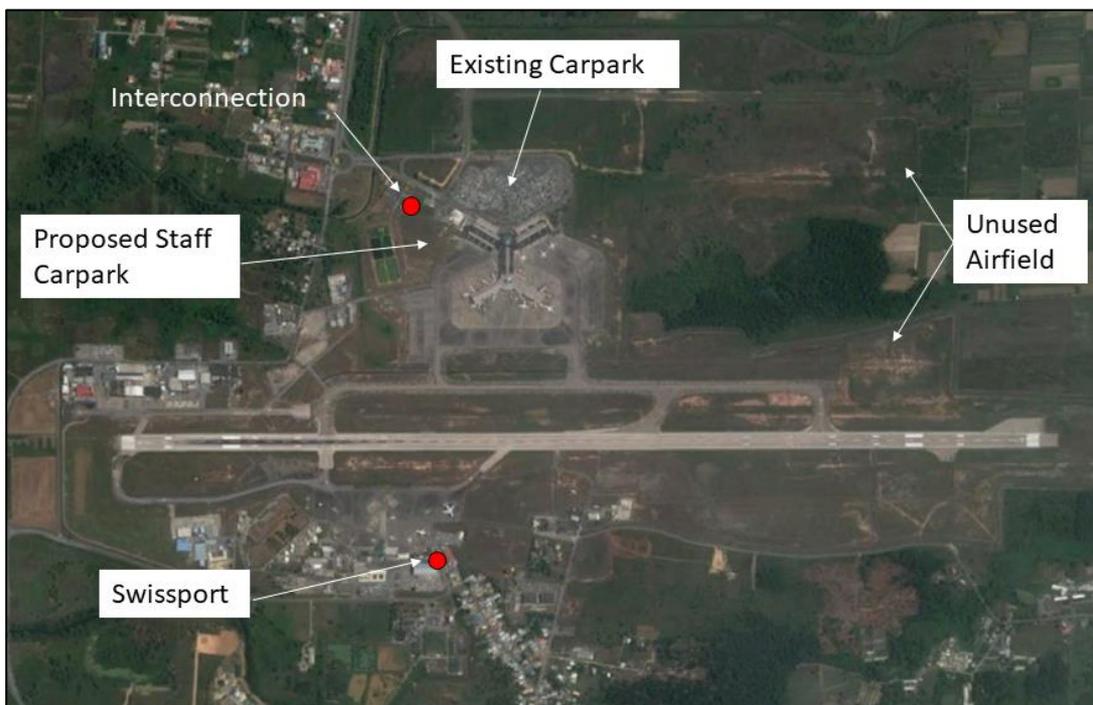


# Port of Spain, Trinidad Solar Feasibility Study

PROJECT FUNDED BY



European Union



- TTCAA
- AATT
- Caribbean Airlines
- Swissport
- TTEC
- Ministry of Planning



ICAO

ENVIRONMENT

ICAO SEMINAR ON  
**GREEN AIRPORTS**

# Conclusions

- Solar integrates well with airports
- Siting expertise required for safety
- Provides cost and supply stability
- Solar at-gate concept eliminates international aviation emissions from APUs
- Projects have co-benefits for eliminating domestic emissions
- Pilot projects demonstrate effective strategy



ICAO

ENVIRONMENT

ICAO SEMINAR ON  
**GREEN AIRPORTS**

# For more information

Go to: [www.icao.int/environmental-protection/](http://www.icao.int/environmental-protection/)

ICAO – United Nations Development Programme ( UNDP) with the Global Environment Facility (GEF) financing:

**TRANSFORMING THE GLOBAL AVIATION SECTOR: EMISSIONS REDUCTIONS FROM INTERNATIONAL AVIATION**



ICAO



ICAO - European Union Joint Assistance Project:

**CAPACITY BUILDING FOR CO<sub>2</sub> MITIGATION FROM INTERNATIONAL AVIATION**



ICAO



Project funded by the European Union  
EuropeAid/Development Cooperation Instrument  
DCI-ENV/2013/322-049

Or email me: [sbarrett@icao.int](mailto:sbarrett@icao.int)

THANK YOU!