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Jamaica Solar At-Gate Pilot Project Stephen Barrett

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Clean Development Mechanism

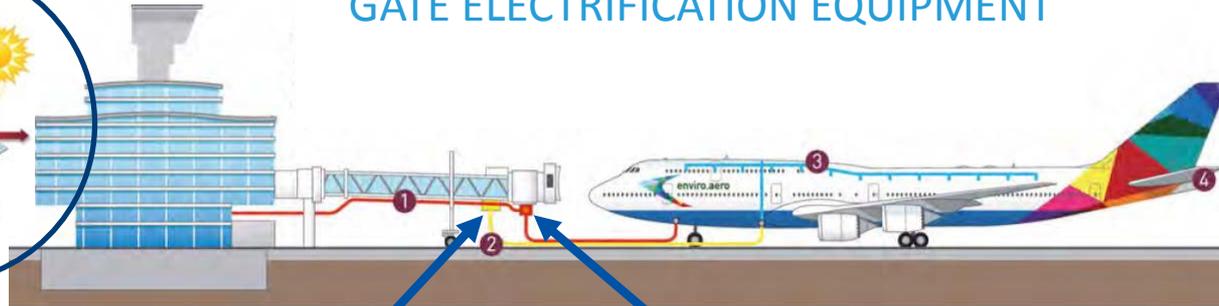
Solar Power for At-Gate Operations

SOLAR



Solar Array

GATE ELECTRIFICATION EQUIPMENT



Preconditioned Air Unit

Ground Power Unit



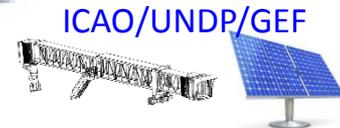
Jamaica Solar At-Gate Pilot Project

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

ICAO/UNDP/GEF Private



Two Airports
Two Funding Models





Norman Manley International Airport

- 100 kW Solar Photovoltaic System
- PCA and GPU for Gate #1





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Sangster International Airport

- PCA and GPU at Gate #9
- Planning support for attracting private partner for solar





Project Steps

- Concept development with local partners
- Secure funding
- Preparation of tender
- Bidders' conference
- Review of bids and selection of contractor
- Design and construction



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Design Options

Ground-mount



Carport



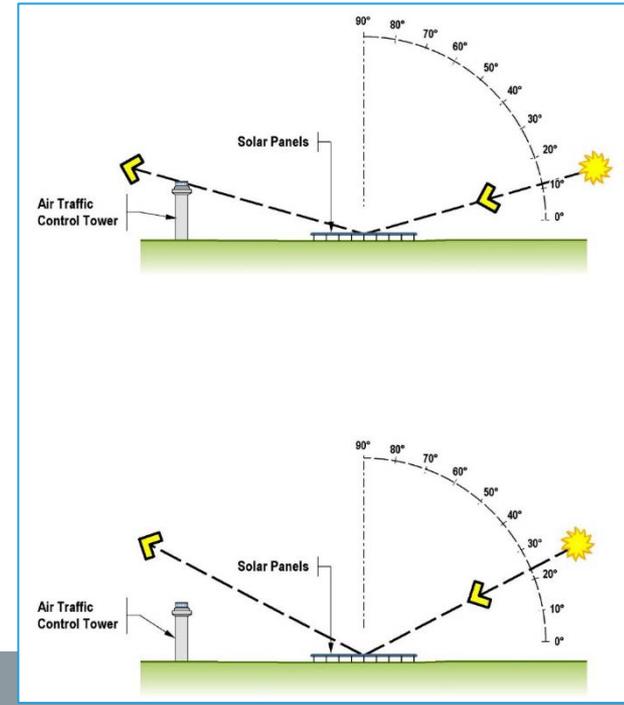
Roof-mount





Glare Analysis

- Use modeling tool
- Assess Airport sensitive receptors
 - Control Tower
 - Aircraft on final approach
- Ensure no adverse impact

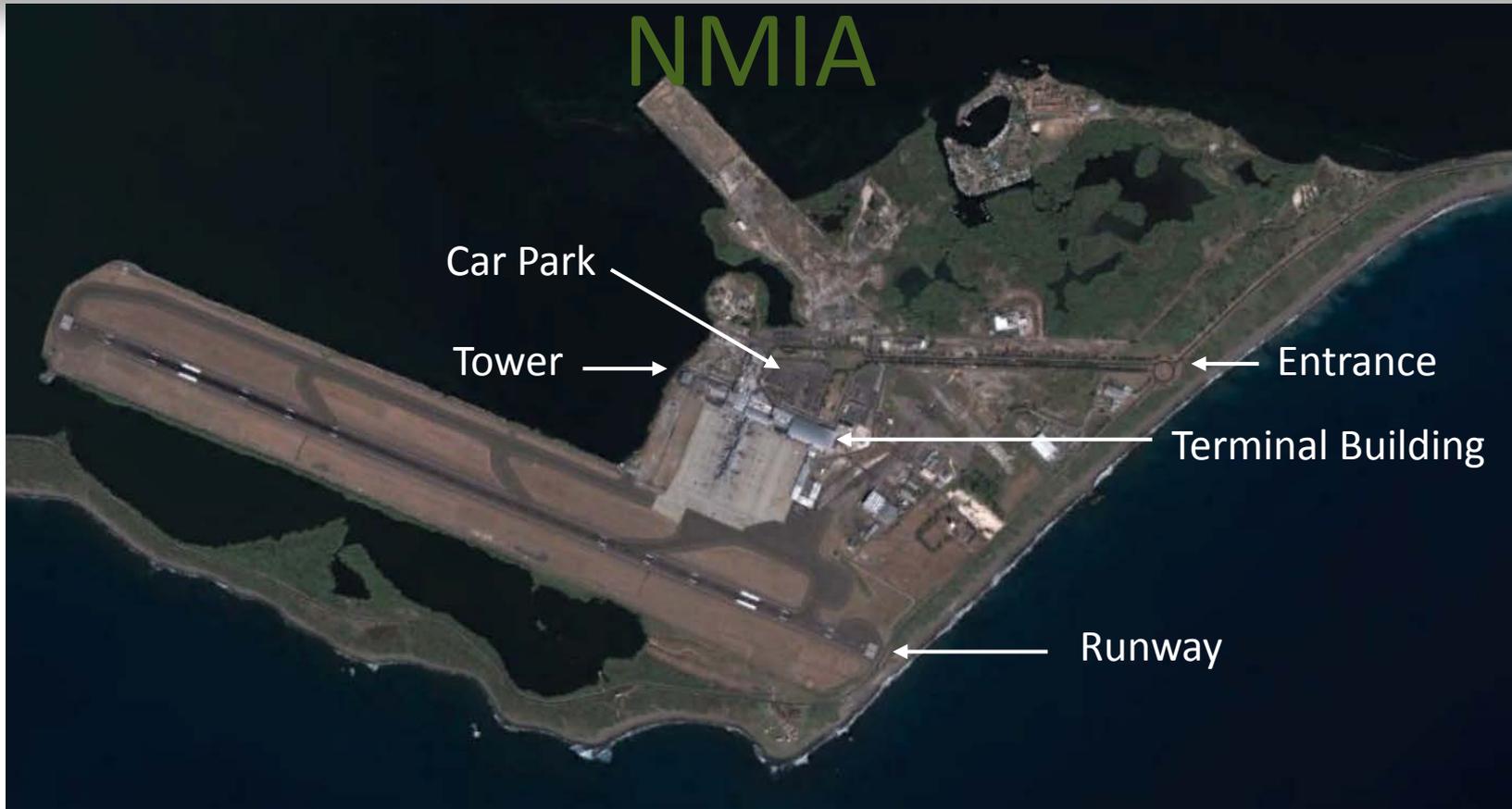




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Main Components

Electrification Gate 1

- Over 1,000 flights annually
- Large percentage of international flights

Solar Carpark

- Close to terminal
- Connect to electrical
- High visibility



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Jamaica Solar at-Gate Pilot Project

Solar Canopy



PCA and 400 Hz GPU





Solar Capacity

- Nameplate 106 kWdc / 100 kWac
- 324 solar panels
- 28 parking spaces covered
- Educational kiosk in terminal departure



Gate Electrification

- Pre-conditioned Air Unit (PCA) and 400 Hz Ground Power Unit (GPU)
- PCA hose
- GPU cable
- Allows aircraft to plug-in to Terminal





Environmental Benefits

- Eliminates jet fuel burn at gate
- Provides power from renewable energy
- Offsets 522 tonnes of CO₂ per year



Next Steps

- Model for other airports
- As CDM approved, could be funded by developed states
- Potential opportunities for NMIA expansion
- Sangster considering solar tender
- ICAO implementing similar pilots in Africa



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