

AVIATION CO₂ REDUCTIONS



STOCKTAKING SEMINAR

TECHNOLOGY · OPERATIONS · SUSTAINABLE AVIATION FUELS



Ground Operations

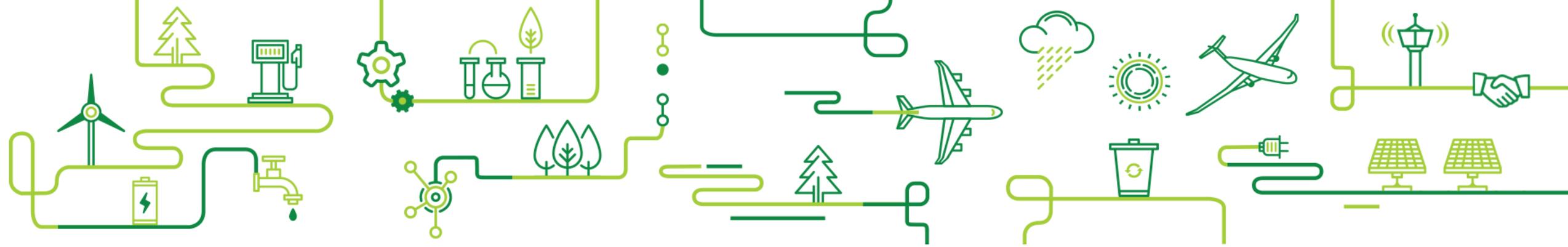
Owen Waithaka

Airport Engineer, Moi International Airport
Mombasa, Kenya



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Solar-At-Gate

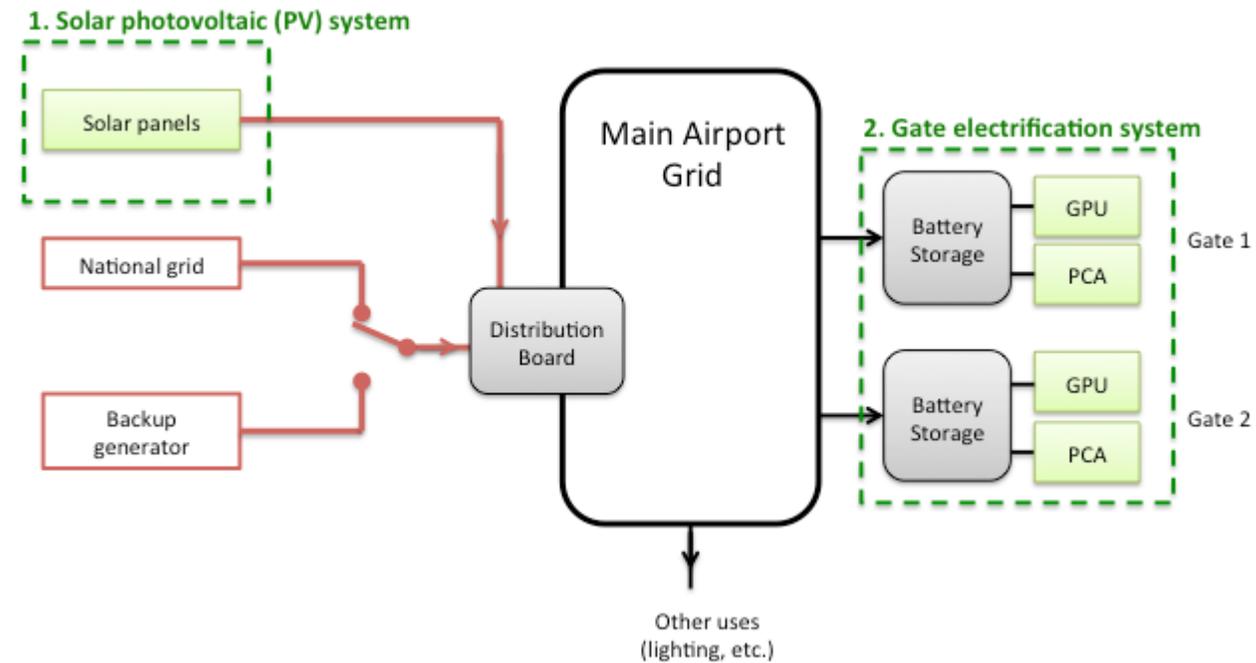
This project was financed by ICAO-European Union Assistance Project Capacity Building for CO2 Mitigation from International Aviation

The objective of the project is to eliminate carbon dioxide emissions from aircraft parked at the gate, the solar-at-gate project was to provide pre-conditioned air and compatible electricity that runs on solar energy to aircrafts during ground operations.

500kWp of power is produced from the solar plant and connected to the airports grid.

A battery storage facility is provided from where each of the six gates is electrified.

Currently, it is possible to provide pre-conditioned air and ground power at one gate at a time using the set of equipment.



OPERATIONS OF SOLAR – AT - GATE

View of a section of the solar power plant comprising of 1,548 x 325Wp PV modules

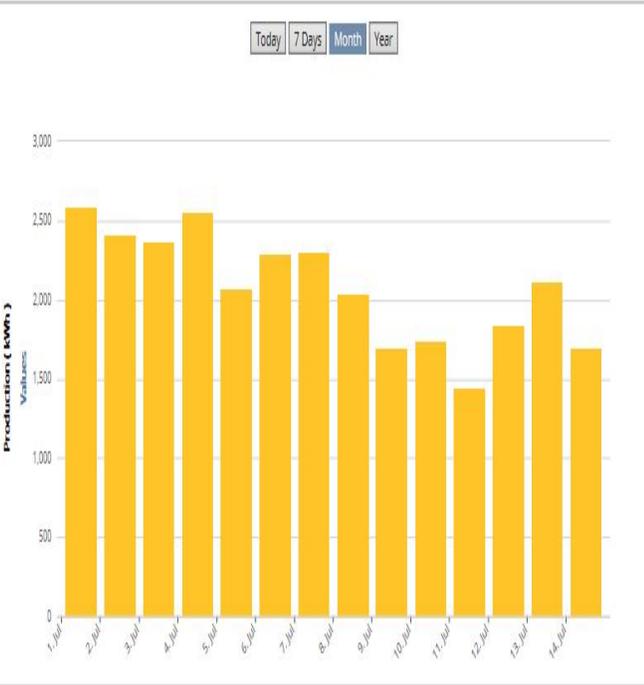


 ICAO

 SOLAR-AT-GATE PROJECT
ICAO-European Union Assistance Project
Capacity Building for CO2 Mitigation from International Aviation

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

Today 7 Days Month Year



Date	Production (kWh)
1 Jul	2550
2 Jul	2400
3 Jul	2350
4 Jul	2500
5 Jul	2050
6 Jul	2300
7 Jul	2300
8 Jul	2000
9 Jul	1650
10 Jul	1700
11 Jul	1400
12 Jul	1800
13 Jul	2100
14 Jul	1650

System Size: 507kWp
Installation Date: 10/05/2019

70 days operating

192,121 This PV system has generated

176,751.71 CO2 kg saved

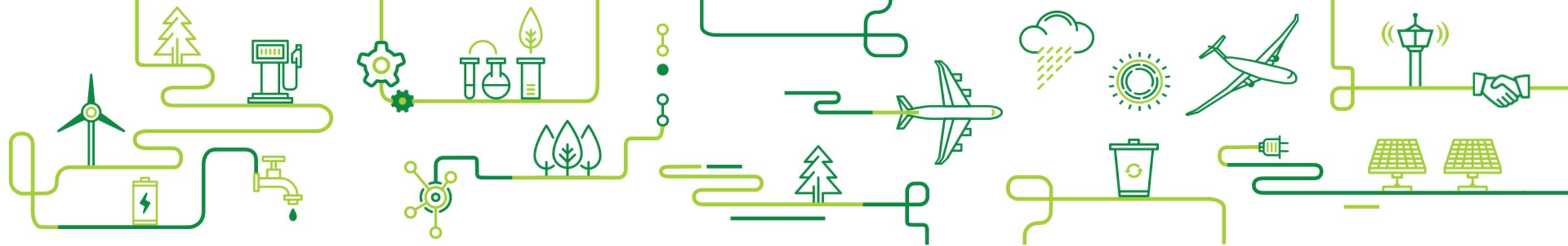


Solar-At-Gate

The GPU and PCA utilization was initially low due to slow acceptance by the stakeholders. Use of the equipment increase during the airports peak season in December 2019.

From mid-March to July 2020. the equipment was not used following suspension of all flight movements as result of COVID-19 pandemic.

	Consumption at Gate kWh	Emissions Saved, kG
Sept 2019	130	207
Oct 2019	150	238
Nov 2019	451	715
Dec 2019	636	1,009
Jan 2020	302	479
Feb 2020	438	694
Mar 2020	140	222



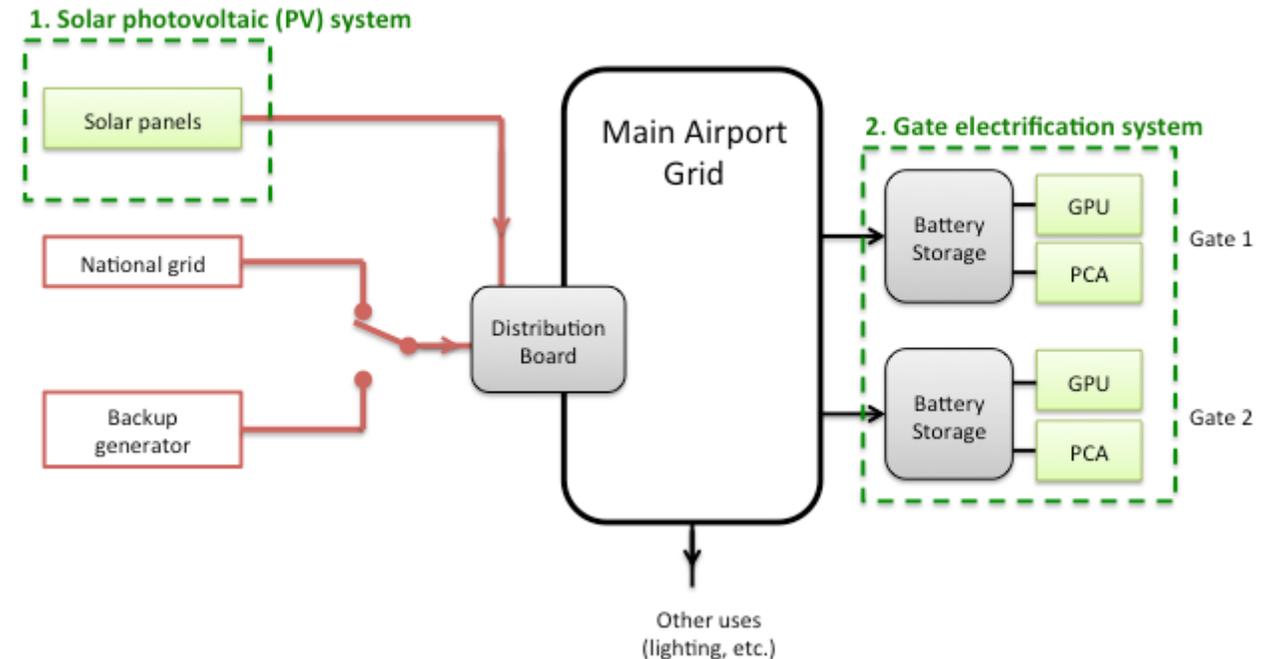
Solar-At-Gate

With resumption of more international flights, the amount of emission savings is expected to proportionally increase towards the targeted 600 tonnes per year.

Despite the initial challenges the amount of carbon emissions saved directly on international flights is calculated at 4 tonnes in the last one year.

In addition to provision of power to the aircraft, more emission savings are realized from use of the generated solar energy at the check-in gates

Future plans are to procure additional GPU and PCA units in order to directly increase the savings on carbon emissions on international and domestic flights. The size of the solar plant will have to be doubled in order to accommodate the increased number of ground equipment.



Thank You

