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BLOCK CHAIN RENEWABLE ENERGYSYSTEM 66S2T

FOMSOD 66S EQUITABLE ENERGY S2000 [2000kg/ Batch] (Solar)

TECHNICAL DATA

Drying Chamber:	9.4 m x 8 m x 12.4 m	Size:	2000 Kg/Batch
Tray:	9.4 m x 6.9 m	Material:	*FGSS
No. of Tray:	150	Power Requirement:	2 kW

System type Solar

Collector Plane Orientation	Tilt	30°	Azimuth	0°
User's needs :	Fixed constant load	2 kW	Global	17.52 MWh/Year

PV Array Characteristics

Total number of PV modules	No. modules	120	Unit Nom. Power	250 Wp
Array global power	Nominal (STC)	30.00 kWp	At operating cond.	26.64 kWp (50°C)
Array operating characteristics (50°C)	U mpp	162 V	I mpp	167 A
Total area	Module area	196 m ²	Cell area	175 m ²
Power Bank:	115.2 kWh		DOA:	2

Heat Exchanger/Drying Chamber Characteristics

Collection Efficiency:	98.0 %	Pick-up Efficiency:	75.0 – 90.0 %
Drying Efficiency:	90.0 %		
Drying Time (t) in hrs. @ 75 % Initial moisture content:	4 ≤ t ≤ 18		

Relative Humidity

	Initial	Final
Capillary moisture:	65 %	46 %
Absorbed Moisture:	35 %	0 %

PV Array loss factors

Thermal Loss factor	Uc (const)	20.0 W/m ² k	Uv (wind)	0.0W/m ² k/m/s
Wiring Ohmic Loss	Global array res.	16 mOhm	Loss Fraction	1.5% at STC
Serie Diode Loss	Voltage Drop	0.7 V	Loss Fraction	0.4% at STC

System Production

Available Energy	43443 kWh/year	Specific prod.	1448 kWh/kWp/year	
Used Energy	17520 kWh/year	Excess (unused)	24914 kWh/year	
Performance Ratio PR	32.68 %	Solar Fraction SF	100.00%	
Loss of Load	Time Fraction	0.0%	Missing Energy	0.0kWh/year
Battery ageing (state of Wear)	Cycle SOW	94.9%	Static SOW	91.7%
	Battery Lifespan	20 years		

CO₂ Balance

Produced Emissions	Total:	54.60 tCO ₂
Replaced Emissions	Total:	523.9 tCO ₂
System Production:	43.44 MWh/yr	Lifetime: 25 years
		Annual Degradation: 1.0 %
Grid Lifecycle Emissions:	402 gCO ₂ /kWh	

CO₂ Emission Balance Total: 400.0 tCO₂

System Lifecycle Emissions Details:

Item	Modules	Supports
LCE	1713 kgCO ₂ /kWp	2.68 kgCO ₂ /kg
Quantity	30.0 kWp	1200 kg
Subtotal [kgCO₂]	51328	3218

Saved CO₂ Emission: 400.0 tCO₂

COST: 32,130,000 NGN

* Food Grade Stainless Steel