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**BLOCK CHAIN RENEWABLE ENERGY SYSTEM** **66S1T**  
 FOMSOD 66S EQUITABLE ENERGY S1000 [1000kg/ Batch] (Solar)

**TECHNICAL DATA**

Drying Chamber:	4.7 m x 3.95 m x 6.2 m	Size:	1000 Kg/Batch
Tray:	4.7 m x 3.45 m	Material:	*FGSS
No. of Tray:	75	Power Requirement:	1.5 kW

System type Solar

<b>Collector Plane Orientation</b>	Tilt	30°	Azimuth	0°
<b>User's needs :</b>	Fixed constant load	400 W	Global	3504 kWh/Year

**PV Array Characteristics**

Total number of PV modules	No. modules	60	Unit Nom. Power	250 Wp
Array global power	Nominal (STC)	<b>15.00 kWp</b>	At operating cond.	13.32 kWp (50°C)
Array operating characteristics (50°C)	U mpp	27 V	I mpp	496 A
Total area	Module area	97.2 m <sup>2</sup>	Cell area	87.6 m <sup>2</sup>
<b>Power Bank:</b>	<b>57.6 kWh</b>		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**

	<b>Initial</b>	<b>Final</b>
Capillary moisture:	65 %	46 %
Absorbed Moisture:	35 %	0 %

**PV Array loss factors**

Thermal Loss factor	Uc (const)	20.0 W/m <sup>2</sup> k	Uv (wind)	0.0W/m <sup>2</sup> k/m/s
Wiring Ohimic Loss	Global array res.	0.92 mOhm	Loss Fraction	1.5% at STC
Serie Diode Loss	Voltage Drop	0.7 V	Loss Fraction	2.3% at STC

**System Production**

<b>Available Energy</b>	<b>18904 kWh/year</b>	Specific prod.	1260 kWh/kWp/year	
Used Energy	8760 kWh/year	Excess (unused)	9648 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	95.0%	Static SOW	91.7%
	Battery Lifespan	20 years		

**CO<sub>2</sub> Balance**

Produced Emissions	Total:	19.56 tCO <sub>2</sub>	
Replaced Emissions	Total:	228.0 tCO <sub>2</sub>	
System Production:	19.9 MWh/yr	Lifetime:	25 years
		Annual Degradation:	1.0 %
Grid Lifecycle Emissions:	402 gCO <sub>2</sub> /kWh		

**CO<sub>2</sub> Emission Balance**

**Total: 178.3 tCO<sub>2</sub>**

System Lifecycle Emissions Details:

<b>Item</b>	<b>Modules</b>	<b>Supports</b>
<b>LCE</b>	1713 kgCO <sub>2</sub> /kWp	2.68 kgCO <sub>2</sub> /kg
<b>Quantity</b>	10.8 kWp	430.0 kg
<b>Subtotal [kgCO<sub>2</sub>]</b>	18412	1153

Saved CO<sub>2</sub> Emission: 120.7 tCO<sub>2</sub>

**COST: 20,910,000 NGN**

\* Food Grade Stainless Steel