



# PROFIT AND COMFORT ENERGY LIMITED RC: 860564

Plot 2028, Apo Legislative Quarters, Sentosa Park, Apo, Abuja  
Plot 6, Elewi Odo, Jonku Area, Ibadan

Tel: +234(0)803 362 2650, +234(0)708 777 4255 +234(0)906 616 6177

Email: [profit.comfort@outlook.com](mailto:profit.comfort@outlook.com); [profits.comforts@gmail.com](mailto:profits.comforts@gmail.com)

Web: <http://www.profitenergy.biz>

## BLOCK CHAIN RENEWABLE ENERGY SYSTEM

FOMSOD 66S EQUITABLE ENERGY S500 [500kg/ Batch] (Solar)

**66S5**

### TECHNICAL DATA

Drying Chamber:	2.35 m x 2.00 m x 3.10 m	Size:	500 Kg/Batch
Tray:	2.35 m x 1.75 m	Material:	*FGSS
No. of Tray:	65	Power Requirement:	1.1 W

System type Solar

<b>Collector Plane Orientation</b>	Tilt	30°	Azimuth	0°
<b>User's needs :</b>	Fixed constant load	600 W	Global	5256 kWh/Year

#### PV Array Characteristics

Total number of PV modules	No. modules	30	Unit Nom. Power	250 Wp
Array global power	Nominal (STC)	<b>7500 Wp</b>	At operating cond.	6.66 kWp (50°C)
Array operating characteristics (50°C)	U mpp	54 V	I mpp	124 A
Total area	Module area	<b>48.6 m<sup>2</sup></b>	Cell area	43.8 m <sup>2</sup>
<b>Power Bank:</b>		<b>36 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		

<b>Relative Humidity</b>	<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 Ohmic Loss	Global array res.	7.4 mOhm	Loss Fraction	1.5 % at STC
Serie Diode Loss	Voltage Drop	0.7V	Loss Fraction	1.2 % at STC

#### System Production

<b>Available Energy</b>	<b>9136 kWh/year</b>	Specific prod.	1218 kWh/kWp/year	
Used Energy	5256 kWh/year	Excess (unused)	3648 kWh/year	
Performance Ratio PR	42.58 %	Solar Fraction SF	100 %	
Loss of Load	Time Fraction	0.0 %	Missing Energy	0 kWh/year
Battery ageing (state of Wear)	Cycle SOW	93.2 %	Static SOW	91.7%
	Battery Lifespan	20 years		

#### CO<sub>2</sub> Balance

Produced Emissions	Total:	2.73 tCO <sub>2</sub>
Replaced Emissions	Total:	36.7 tCO <sub>2</sub>
System Production:	9136.29 kWh/yr	Lifetime: 25 years
		Annual Degradation: 1.0 %

Grid Lifecycle Emissions: 402 gCO<sub>2</sub>/kWh

**CO<sub>2</sub> Emission Balance Total: 32.4 tCO<sub>2</sub>**

#### System Lifecycle Emissions Details:

<b>Item</b>	<b>Modules</b>	<b>Supports</b>
LCE	1713 kgCO <sub>2</sub> /kWp	2.68 kgCO <sub>2</sub> /kg
Quantity	1.50 kWp	60.0 kg
<b>Subtotal [kgCO<sub>2</sub>]</b>	<b>2569</b>	<b>161</b>

Saved CO<sub>2</sub> Emission: 32.4 tCO<sub>2</sub>

**COST: 15,010,000 NGN**

\* Food Grade Stainless Steel