



# 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 66H EQUITABLE ENERGY H2000 [2000kg/ Batch] (Hybrid)

**66H2T**

### TECHNICAL DATA

Drying Chamber:	9.40 m x 8.00 m x 12.40 m	Size:	2000 Kg/Batch
Tray:	9.40 m x 6.90 m	Material:	*FGSS
No. of Trays:	120	Power Requirement:	400 W

System type Hybrid

<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	26	Unit Nom. Power	250 Wp
Array global power	Nominal (STC)	<b>6.50 kWp</b>	At operating cond.	5.85 kWp (50°C)
Array operating characteristics (50°C)	U mpp	27 V	I mpp	217 A
Total area	Module area	<b>42.6 m<sup>2</sup></b>	Cell area	38.0 m <sup>2</sup>
<b>Power Bank:</b>	<b>38.4 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 %

#### EQUITY POWER OUTLETS:

- Pumping Machine
- Milling Machine
- Street Lights
- Cooking
- Cooling for storage of finished products / yet to be processed products

#### 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.	2.1 mOhm	Loss Fraction	1.5% at STC
Serie Diode Loss	Voltage Drop	0.7V	Loss Fraction	2.3% at STC

<b>System Production</b>	<b>Available Energy</b>	<b>3331 kWh/year</b>	Specific prod.	1332 kWh/kWp/year
	Used Energy	1752 kWh/year	Excess (unused)	1495 kWh/year
	Performance Ratio PR	39.21 %	Solar Fraction SF	100.00%
Loss of Load	Time Fraction	0.0 %	Missing Energy	0.0kWh/year
Battery ageing (state of Wear)	Cycle SOW	94.1 %	Static SOW	91.7%
	Battery Lifespan	20 years		

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

Relative Emissions (Conventional)	Total:	7.73 tCO <sub>2</sub>
Replaced Emissions	Total:	104.7 tCO <sub>2</sub>
System Production:	8680.58 kWh/yr	Lifetime: 25 years
		Annual Degradation: 1.0 %
Grid Lifecycle Emissions:	402 gCO <sub>2</sub> /kWh	
<b>CO<sub>2</sub> Emission Balance</b>	<b>Total:</b>	<b>83.1 tCO<sub>2</sub></b>

#### 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>	4.25 kWp	170.0 kg
<b>Subtotal [kgCO<sub>2</sub>]</b>	7279	456
Saved CO <sub>2</sub> Emission:	30.3 tCO <sub>2</sub>	

**COST: 18,760,000 NGN**

\* Food Grade Stainless Steel