



# 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 H1000 [1000kg/ Batch] (Hybrid)

**66H1T**

### TECHNICAL DATA

|                 |                          |                    |               |
|-----------------|--------------------------|--------------------|---------------|
| Drying Chamber: | 4.70 m x 3.95 m x 6.20 m | Size:              | 1000 Kg/Batch |
| Tray:           | 4.70 m x 3.45 m          | Material:          | *FGSS         |
| No. of Trays:   | 60                       | Power Requirement: | 200 W         |

System type Hybrid

|                                    |                           |                      |
|------------------------------------|---------------------------|----------------------|
| <b>Collector Plane Orientation</b> | Tilt 30°                  | Azimuth 0°           |
| <b>User's needs :</b>              | Fixed constant load 200 W | Global 1752 kWh/Year |

#### PV Array Characteristics

|  |                 |                           |                    |                     |
|--|-----------------|---------------------------|--------------------|---------------------|
| Total number of PV modules             | No. modules     | 14                        | Unit Nom. Power    | 250 Wp              |
| Array global power                     | Nominal (STC)   | <b>3500 Wp</b>            | At operating cond. | 2251 Wp (50°C)      |
| Array operating characteristics (50°C) | U mpp           | 27 V                      | I mpp              | 83 A                |
| Total area                             | Module area     | <b>23.1 m<sup>2</sup></b> | Cell area          | 14.6 m <sup>2</sup> |
| <b>Power Bank:</b>                     | <b>19.2 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

|                     | Initial | Final |
|---------------------|---------|-------|
| 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. | 5.4 mOhm                | Loss Fraction | 1.5% at STC               |
| Series Diode Loss   | Voltage Drop      | 0.7V                    | Loss Fraction | 2.3% at STC               |

#### System Production

|                                |                      |                   |                   |             |
|--------------------------------|----------------------|-------------------|-------------------|-------------|
| <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:                    | 4.55 tCO <sub>2</sub>     |
| Replaced Emissions                | Total:                    | 40.2 tCO <sub>2</sub>     |
| System Production:                | 1329.30 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: 30.3 tCO<sub>2</sub>**

#### System Lifecycle Emissions Details:

| Item                               | Modules                     | Supports                   |
|------------------------------------|-----------------------------|----------------------------|
| LCE                                | 1713 kgCO <sub>2</sub> /kWp | 2.68 kgCO <sub>2</sub> /kg |
| Quantity                           | 2.50 kWp                    | 100.0 kg                   |
| <b>Subtotal [kgCO<sub>2</sub>]</b> | <b>4282</b>                 | <b>268</b>                 |

Saved CO<sub>2</sub> Emission: 30.3 tCO<sub>2</sub>

**COST: 12,120,000 NGN**

\* Food Grade Stainless Steel