ZubaBox is an internet connectivity solution that is mobile, solar-powered and easy to set up. Perfect for locations lacking electricity or communication connections, ZubaBox contains everything required to establish a community resource centre or an IT classroom.

ZubaBox is designed to work anywhere in the world, requiring no wired internet or (mains) electricity supply. The thin-client computer network is powered by solar panels on the roof of the container. Internet connection is wireless.

The standard version is simple to set up: simply place the already prepared array of solar panels on the roof of the container, and connect 2 wire connectors, plug and play! The server has software pre-installed and wiring is provided to connect the 11 flat-screen monitors. Internet connectivity can be provided via a cellular USB, wifi or VSAT (not provided and will be different in each country).

Computer Hardware for 11 concurrent users
- 1 refurbished Pentium 4 PC, 3.0Ghz+, with 3Gb of RAM and 80Gb+ hard disk
- 2 NComputing X550 desktop virtualisation cards
- 11 low-power monitors, keyboards & mice

Solar Hardware
- low-power ceiling light;
- a ventilation fan for the server to assist with system cooling and efficiency;
- sockets for recharging up to 10 mobile phones while the system is running;
- additional capacity in case the cafe requires powering a VSAT modem or printer;
- an advanced inverter, limiting the depth of discharge of the batteries and the maximum power draw accepted by the system, in order to help preserve battery-life

We only use poly-crystalline solar panels and the latest Advanced Glass Mat (AGM) type cell batteries. They are maintenance free units, providing the lowest conversion loss. The systems are designed to operate throughout the day. Additionally they can accommodate a number of hours of usage during a rainy day.

“Previously we were unable to reach the world outside Chikanta or Zambia, but since the internet came, we are able to connect to any part of the world... every chief in Zambia wants this” Chief Chikanta, Zambia

In addition to the standard model we have an economy model for those who wish to construct the internal fit themselves locally and keep costs to a minimum.

<table>
<thead>
<tr>
<th>Features/Model</th>
<th>Economy</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Consumption (Max)</td>
<td>485W</td>
<td>485W</td>
</tr>
<tr>
<td>Solar Panels</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Power Produced (Max Peak)*</td>
<td>700W</td>
<td>1400W</td>
</tr>
<tr>
<td>Battery Cells</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Maximum Consecutive Usage (inc. During Rain)*</td>
<td>6 Hours</td>
<td>10 Hours</td>
</tr>
<tr>
<td>Risk of Daylight Interruption in the Rainy Season*</td>
<td>3 Days/Year</td>
<td>0 Days/Year</td>
</tr>
<tr>
<td>Cost not including shipping</td>
<td>£12,000</td>
<td>£17,000</td>
</tr>
<tr>
<td>Insulated Internal Walls, Ceiling and light, Electrical &amp; Network Wiring, Counter and User Benches</td>
<td>Installed</td>
<td></td>
</tr>
<tr>
<td>Cost not including shipping</td>
<td>£17,000</td>
<td>£22,000</td>
</tr>
</tbody>
</table>

*Please Note: the costs and performance statistics indicated above are given as a guide and will vary according to the geographical location of the ZubaBox.
Frequently Asked Questions

Q. What else is contained in the ZubaBox?
A. The package includes
  ‣ low-power ceiling lighting
  ‣ a ventilation fan for the server to assist with system cooling and efficiency
  ‣ sockets for recharging up to 10 mobile phones while the system is running
  ‣ additional capacity in case the unit is required to power a VSAT modem or printer
  ‣ an advanced inverter, limiting the rate of discharge from the batteries and the maximum power draw accepted by the system, in order to ensure longer battery-life

Q. What is NComputing and what are the benefits?
A. NComputing is a desktop virtualization thin-client based solution. A Pentium 4 PC, 3.0 Ghz+, with 3GB of RAM and 80Gb+ hard disk is used to serve up to 11 users. The computer is fitted with 2 NComputing X550 desktop virtualization cards plus 11 low-power monitors. The main benefit is the ability for up to 11 concurrent users to access computer applications and connectivity through one single computer/server. Computer Aid provides two professionally refurbished P4 computers, one as backup incase of any failures.

Q. How long will the batteries last following a full charge?
A. The batteries will run for 6 hours in the Economy Model and 10 hours in the Standard Model, any day of the year in Zambia - *see note above.

Q. How much power is generated on a normal day?
A. Peak energy production is 1400W per hour, but this rate will not be sustained throughout the day.

Q. How much power is consumed in a normal day?
A. The system uses a maximum of 485W per hour. The system is designed to work throughout a full day with daylight or overcast weather. Additionally the system can operate for a number of hours during a rainy day.

Q. Do you provide a warranty for the new electrical and electronic appliances?
A. No warranty is provided for the electrical components.

Q. What is the warranty for the solar panels, inverter and batteries?
A. The battery warranties naturally assume the cells have been used within their healthy limits. When opening up the cells for a warranty claim the manufacturers can easily tell if the cells have been excessively over discharged and abused. Batteries will last 5 to 10 years if used as per instructions. Solar Panels have a life expectancy of at least 25 years. Inverter and charge controller warranty: 2 years. Storage batteries warranty: 5 years (2 year replacement 3 year pro-rated). A free replacement will be provided by the manufacturer if the unit fails within the first 24 months due to manufacturing defects. Shipping costs from the factory to the containers location would be additional. After the first 24 months of service, effective batteries will be adjusted for a period of up to 60 months, prorated from the date sold at prices in effect at the time of adjustment.

Q. What connectivity solution is recommended?
A. Depending on the area where the system is installed, different options might be available, such as Cellular wireless, Wifi/ Wimax or VSAT. VSAT is recommended only in places where no other option is available.

Q. What is the total cost of ownership for a year?
A. This depends entirely on the form of connectivity chosen and the cost of that connectivity in the local country. The power from the sun is free. Solar panels last at least 25 years. As for batteries, their duration depends on usage, they could last for five years before needing to be changed. It is possible to generate income from users fees for connectivity and phone charging or from the delivery of localized service to sustain the solar container.

Q. Why can’t the standard model be assembled locally to reduce on the capital costs?
A. We have no local partners who can build or equip the standard model to our specification.

Q. Why is it called ZubaBox?
A. Zuba is the word for ‘Sun’ in Nyanja, a language that is spoken in Zimbabwe, Malawi and Southern Zambia - the area where our first ZubaBox was deployed to harness power from the sun to provide internet connectivity for the community.

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