

## **Lindo's Group of Companies – Final Submission**

Lindo's Group of Companies has been a leader in thinking and being GREEN over the last few years. From Green bags to solar panels, Lindo's has aimed to reduce our consumption of and dependence on fossil fuels. But there is more to the story than Solar Panels and Green Bags. Lindo's refrigeration systems are being replaced or retrofitted to be more energy efficient. The lighting in the stores is being audited and refitted with more energy efficient bulbs and fixtures. The meat and produce trays will be replaced with recycled biodegradable trays made from bull rushes. Here is an in-depth look at some of the green projects in progress at Lindo's Group of Companies.

### **Sunpower Solar panels**

There are currently 297 E19 238Watt Sunpower panels installed by AES (Alternative Energy Systems) Bermuda Ltd. on the roof at Lindo's Devonshire. At 5 hours of good sunlight per day the panels will produce approximately 354 kilowatts per day or 10600 kW in 30 days. This production could provide between 40% and 60% of Lindo's load requirements. Ten thousand, six hundred kilowatts per month is also the equivalent to reducing our carbon foot print by 17,590lbs of CO<sub>2</sub>, not driving 17420 miles in a standard car, or planting 195 tree seedlings grown for 10 years. In a year that is 211,097lbs of CO<sub>2</sub>, 209,044 miles not driven in a standard car, or 2,346 trees grown for 10 years. The panels are under warrantee for 25 years. After 25 years our carbon foot print will be reduced by 5,277,435 lbs of CO<sub>2</sub>, 5,226,099 miles not driven in a standard car, or 58,669 tree seedlings grown for 10 years.

*Note:* The first month output figure from May 20th to June 20th was 12,022kWh (as supplied by AES).

### **Hill Phoenix Refrigeration Systems**

Lindo's in Warwick has recently undergone a major installation of a new parallel refrigeration system, new refrigerated display cases on the display floor, and new blowers in all of our storage cases. The new Refrigeration was installed and is managed and maintained by BAC Ltd. Lindo's Market was one of the first companies to have a parallel refrigeration system over 20 years ago and was the most energy efficient at that time. Since then parallel systems have come leaps and bounds. Through the use of better technology and software, the systems are much more efficient today. In laymens terms, the parallel system is what distributes refrigerant to the display cases or storage rooms. Each display case or storage unit has a dedicated circuit and valve at the parallel system. Horse power, provided by a group of compressors, is required to drive the refrigerant to the display cases or storage units. The refrigerant passes through a coil in the display case while fans blow air over the coils which cool the air in the display case. As the fans blow air over the coils, the refrigerant absorbs heat in the case. The refrigerant is driven to a condenser that recools the refrigerant gas which then returns to the parallel system to begin the cycle all over again. The display cases and storage units don't need refrigerant all the time once they reach the set point temperature. Monitoring software and valves allow the parallel system to adjust as necessary, without running 100% of the time when not needed. The new parallel system and display cases are fitted with digital valves and controllers. The controllers are programmed to monitor the set point temperatures of the cases. The valves at the cases and parallel system will open and close, maintaining the temperature as efficiently as possible. When the refrigerant does not have to be distributed then compressors don't need to be running. When compressors don't need to be running then fans on the condensers don't need to be running. The controllers shut down unnecessary compressors (horse power) and fans reducing our energy consumption. Some of the compressors are also digital and they are capable of running between a 1 ½ hp and 5 hp. The compressor will throttle to whatever horse power is required in that range. This reduces the surge of energy that is required to restart a stopped motor. Lindo's Market will be undergoing a retrofit of their refrigeration system that will give them the same capability.

### **Lighting**

Some other GREEN initiatives set to take place this summer include a lighting redesign at Lindo's Warwick where we will be replacing all display floor lighting with a combination of fluorescent and LED lighting. Lindo's Market will be looking to do the same but on a smaller scale for now. We are looking to decrease our unnecessary lights and introduce lighting that consumes less energy. In addition, the new refrigeration and display cases are fitted with LED lights. The lights in the old display cases were drawing approximately 30 amps. The new LED lights are rated to draw 14 amps. They are actually drawing 7 amps as measured by our electrician.

### **Meat and Produce Trays**

Also, all of our Styrofoam trays will soon be replaced with biodegradable trays made from bull rushes. The trays are non genetically modified, freezer safe, compostable in your garden, can be reused, microwave safe and bleach free.

### **Green Products**

We have a special section at Lindo's Devonshire but here at Lindo's Warwick we have integrated the green and organic products into the regular shelves. We felt that it was better for the customer as they are able to directly compare organic or green products to the alternatives. In a lot of cases, the green products are priced competitively and if the customer can see that they may choose the green product. It also helps when a customer is looking for something specific (like soap for example) if all of the like products are displayed together. In some cases the customer may not know that there is a green alternative but by displaying the products all together the customer can make a more informed purchase.

### **Community initiatives**

Lindo's Group of Companies sponsors The Shark Project. Our shark – Harry Lindo is still transmitting data (after 2 years). Choy Aming provided some data last month showing Harry Lindo turned north on exactly the same day as he did the year before – April 20th.

**It is important to note that while some of these projects do save money they are usually very expensive to undertake, with the savings not being realized for many years. Our motivation is not primarily to save money. Lindo's executive management genuinely cares about the environment and we know the earth'' was not given to you by your parents, it was loaned to you by your children. We do not inherit the Earth from our Ancestors, we borrow it from our Children.'' (Ancient Indian Proverb)**