Alice Solar City
ENERGY CHAMPIONS

In-House Display Manual

PowerWater

Welcome to your new In-House Display (IHD) unit, which is installed as part of your involvement in the Alice Solar City and Power and Water Corporation Cost Reflective Tariff (CRT) trial. The IHD will show you a range of information about your power consumption, including:

- Current power consumption, in kilowatts (kW);
- Your current tariff rate, either peak or off-peak, and the current electricity cost at the time you are viewing the IHD;
- Peak, off-peak and total electricity consumption in kilowatt hours (kWh) by day, week or month;
- Percentage breakdown by peak and off-peak of electricity consumption by day, week or month;
- Indicative power usage costs for the current month;
- CO_2 emissions by day, week or month.

How does the In-House Display work and what can it do for me?

The IHD communicates on a short-range wireless system with the Smart Meter that has been installed in the meter box in your home. The Smart Meter records all the data that is eventually shown on the various screens of the IHD. There are no charges that apply to transfer the information, nor do you have to turn the wireless system on or off. While the range of the wireless system should be enough to reach most places in your home, the first time you plug in the IHD you should try to position it close to where your Smart Meter is installed. When you plug in your IHD (and each time you turn it on again after it has been unplugged) the device will communicate with the Smart Meter and upload recent electricity consumption information. You should allow a few minutes for this to occur. *You do not need to leave the IHD plugged in.* The IHD uses very little energy itself (only about 7 watts).

By scrolling through the various screens you will discover a range of information about your current and previous energy consumption. Tips and experiments are also included in this manual to help you understand where energy is being used and ways that you can reduce your consumption and costs.

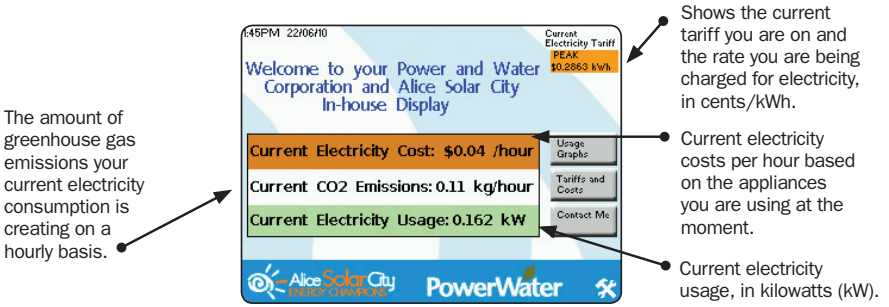
Care of your IHD

The IHD is provided to you as part of the Alice Solar City project. It remains the property of Alice Solar City and the Power and Water Corporation. **You will be required to return the IHD at the end of the Alice Solar City project trial.** Similarly, if you move out of the house, you must return the IHD to Alice Solar City. You can return it any time beforehand if you wish. The IHD is programmed to communicate only with the Smart Meter installed in your home and should not be moved to another location. Like any electronic device, care should be taken to avoid damage either by dropping it or allowing contact with water etc. We recommend it be stored in a visible, safe place, out of reach of small children. Refer to the back page for trouble shooting advice.

Information screens

Welcome Screen

The IHD is navigated simply by touching the screen displays. After you plug in the device you will see the following *Welcome Screen*. The first time you plug the IHD in, it will take a minute or two to detect and communicate with your Smart Meter. Some of the information displayed on the main menu screen will change as you increase or decrease your electricity consumption. The backlit border around the LCD screen shows at a glance the current tariff rate - orange for peak or green for off-peak.



Experiment – *checking appliance power consumption and standby power.*

Check how much electricity an appliance uses by switching it on or off and seeing how much the *Current Electricity Usage* figure changes. This figure will take about five seconds to update on the screen. Try turning on the air conditioner to see how much electricity it uses. Another experiment is to turn off all non-essential appliances in the house and monitor how much electricity is still being consumed. You might be surprised at how much you are using and how hard it is to find those appliances that are still using electricity when you thought they weren't.

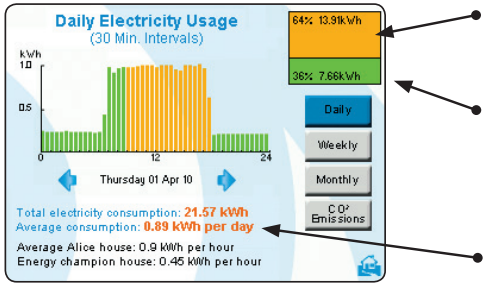
Home

You will notice a **Home** icon on every page. Touching the Home icon will bring you back to the *Welcome Screen*.

Usage Graphs - Daily electricity usage

By touching the grey button marked **Usage Graphs**, you will move to the following screen. This shows your electricity consumption for the current day (measured on a half hourly basis) as indicated on the vertical axis in kWh. The horizontal axis shows time in half hour blocks. The green area shows the periods during the current day that you were being charged at the off-peak rate and the orange area shows when you were being charged at the peak rate. Refer to the Alice Solar City factsheet on the Cost Reflective Tariff trial for more information about peak and off-peak tariff rates or visit the Alice Solar City website.

You can view information about your electricity consumption for other days by using the blue arrows. Touch ◀ or ▶ to scroll forwards or backwards. The amount of information stored in the IHD is dependant on how long your smart meter has been installed. The box in the top right hand corner shows the breakdown of peak and off-peak electricity consumption for the day, in both kWh and %. Remember, one of the aims of the Cost Reflective Tariff trial is to move electricity consumption from peak to off-peak times, so the higher the off-peak %, the better.



Your total electricity consumption for the day (in kWh)

Peak electricity consumption (in kWh) and % for current day

Off-peak electricity consumption (in kWh) and % for current day

Average hourly electricity consumption

Experiment – *how does your **average consumption/hour** figure compare?*

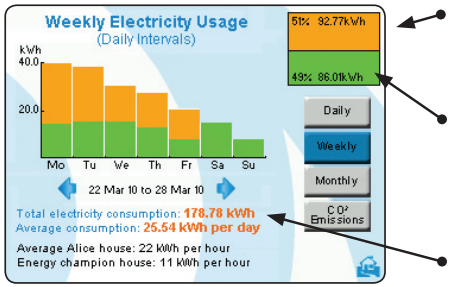
The average house in Alice Springs uses around 8000kWh of electricity per year. Assuming electricity consumption was consistent throughout each day of the year, this would equate to around 0.9kWh per hour. An energy- efficient home uses about half that. Bear in mind that each house's energy consumption will change from day to day depending on the lifestyle of the occupants of the house. You may notice 'spikes' on your graphs. This reflects when you use more appliances or perhaps one appliance that uses a large amount of electricity, such as an air conditioner, heater or pool pump.

Tip

You should aim to use appliances in off-peak times rather than peak times where possible. If you currently have lots of high 'orange' bars on your graph, try using appliances before 9am or after 6pm Monday to Friday, or anytime on weekends instead. Remember that this graph refers to the day indicated below the graph. For a better indication of your overall energy consumption, see the **Weekly** and **Monthly** graphs below.

Usage Graphs - Weekly

By touching the button marked **Weekly**, you will move to the following screen. This screen shows your electricity consumption for the 7 day period from Monday to Sunday, for the date range shown under the graph. The box in the top right hand corner shows the breakdown of peak and off-peak electricity consumption for the week, in both kWh and %. Each day is broken into peak and off-peak consumption measured in kWh on the vertical axis. You can view information about your electricity consumption for other weeks by using the blue arrows. Touch ◀ or ▶ to scroll forwards or backwards.



Your average daily electricity consumption during the week

Peak electricity consumption (in kWh) and % for the week

Off-peak electricity consumption (in kWh) and % for the week

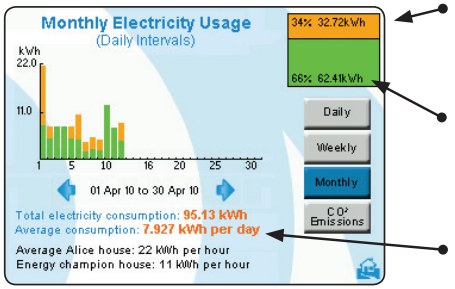
Your total electricity consumption (peak and off peak) for the the week

Experiment – *how does your **average consumption/day** figure compare over the last seven days?*

The average house in Alice Springs uses around 22 kWh per day, although households typically use more in summer and less in winter. An energy efficient home uses about half that. Bear in mind that each house's energy consumption will change from day to day, depending on the time of the year and on the lifestyle of the occupants of the house. For example, households whose occupants work normal business hours Monday to Friday will tend to have low consumption on weekdays but higher consumption on weekends. In any case, if you can achieve daily electricity consumption of less than 10 kWh per day you are doing very well.

Usage Graphs - Monthly

By touching the button marked **Monthly** you will move to this screen. This screen shows your electricity consumption for the month indicated below the graph. Each day is broken into peak and off-peak consumption measured in kWh on the vertical axis. The horizontal axis shows time in one day blocks.



Your total electricity consumption (peak and off peak) for the current month

Peak electricity consumption (in kWh) and % for the month

Off-peak electricity consumption (in kWh) and % for the month

Your average daily electricity consumption during the month

Experiment – *how does your **average consumption/day** compare over the last month?*

The average house in Alice Springs uses around 22 kWh per day although many householders will use more in summer and less in winter. An energy efficient home uses about half that.

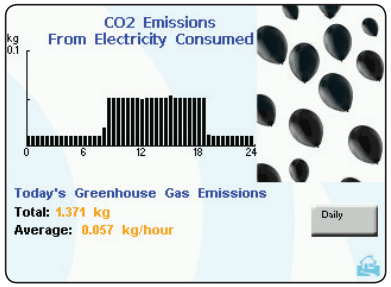
You may notice a pattern where certain days show higher energy consumption than others. This may reflect higher use of appliances on the weekend. Other reasons could be the use of a high energy consuming appliance (such as an air conditioner on a particularly hot day, a heater in winter, or the element in an electric or solar hot water system).

You can view information about your electricity consumption for other months by using the blue arrows. Touch ◀ or ▶ to scroll forwards or backwards. The box in the top right hand corner shows the breakdown of peak and off-peak electricity consumption for the month, in both kWh and %.

CO_2 Emissions

By touching the grey button marked **CO_2 Emissions** you will move to the screen showing CO_2 emissions. The graph shows the approximate amount of emissions created by generating electricity to meet your consumption, measured as kilograms of CO_2. You can track your emissions for a day, a week or a month, depending on which usage graph you were looking at on the previous screen. The emissions factor is based on the typical emissions from the Alice Springs power station.

Daily total of emissions, in kg of CO_2



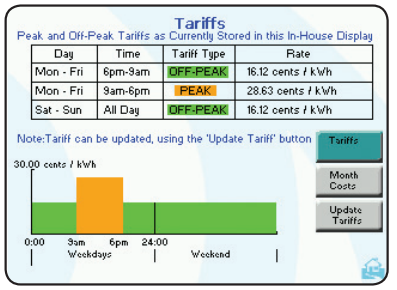
Tip

The amount of emissions produced is directly related to how much electricity you consume regardless of whether this is peak or off-peak. So, to help reduce your household's carbon footprint and that of Alice Springs, be as efficient as possible. With the average Alice Springs home consuming around 8000 kWh per year, typical annual household emissions from electricity consumption is 5.6 tonnes of CO_2, more than the annual CO_2 emissions from an average family car.

Other screens

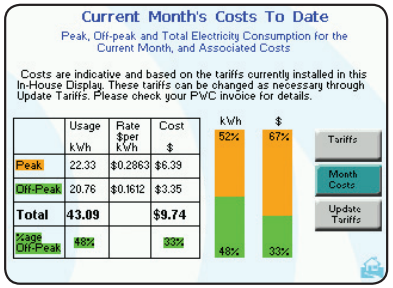
Tariffs

By touching the grey button marked **Tariffs and Costs** from the *Welcome Screen*, you will see the following screens. These show you the different electricity tariffs that apply to you, on the weekend and on weekdays. Peak times apply from 9am to 6pm Monday to Friday (including public holidays); off peak is before 9am and after 6pm on Monday to Friday and all day on weekends.



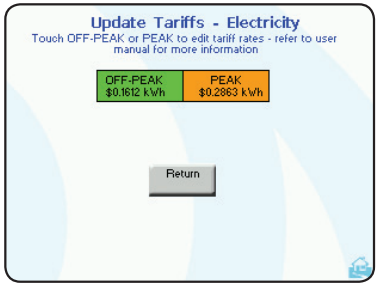
Costs

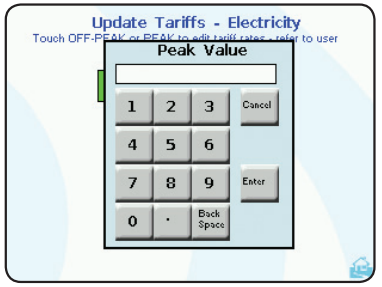
By touching the grey button marked **Month Costs** you will see the following screen. This shows you peak, off-peak and total electricity consumption for the current month. Using the tariff rates stored in the IHD, it also gives an indication of the $ value of your consumption, again broken down by peak, off-peak and total consumption. Please note, these figures do not include fixed daily charges and are indicative only, and may not exactly match your Power and Water electricity bill.



Updating Tariffs

Your IHD will be programmed with the current tariff rates. However, the tariff rates stored in the IHD need to be updated manually when Power and Water change their tariffs (normally on 1 July every year). Alice Solar City will contact householders to advise the new rates. You can also contact Power and Water directly.





To update the tariffs, touch the button marked **Update Tariffs** – this will bring up the left screen at the bottom of page 7. To select a tariff to update, touch the green **Off-Peak** or the orange **Peak** button. When tariffs change, you will need to update both.

You will then see the data entry screen shown at the bottom right of page 7. Enter the new tariff rates, being careful to use the correct figures. For example, enter .30 for a tariff rate of 30 cents/kWh. Press **Enter** when you have entered the new tariff, and repeat the same procedure for both the **Off-Peak** and **Peak** tariffs.

Contact Me

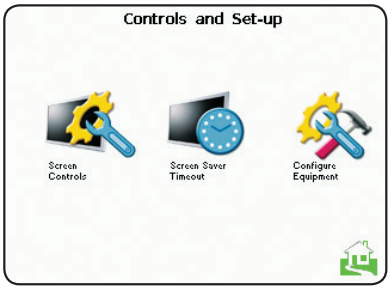
By touching the grey button marked **Contact Me** from the **Main Menu**, you will see a screen which provides contact phone numbers for Power and Water Corporation and default contacts for emergency services. Please note, your IHD has no connection to a phone or the internet.

Set-up

You can adjust basic settings on your IHD. By touching the **Set-up** icon shown here which appears on the *Welcome Screen*, the following screen "Controls and Set-up" will appear.

By touching the icon marked **Screen Controls** you will be able to adjust contrast/brightness and toggle the 'beeper' on or off. There is also an option to set the time and date. However as this information is taken from the Smart Meter, you should not need to adjust the time and date.

By touching the icon marked **Screen Saver Timeout,** you will be able to adjust the number of minutes before the IHD display enters 'sleep mode'. If the IHD is in sleep mode, you can easily wake it up by touching any part of the screen.



The icon titled **Configure Equipment** is for use by Power and Water Corporation staff to adjust other key settings and is password protected to ensure that settings are not accidentally changed.

Troubleshooting

Should you have any difficulties with your IHD, it is recommended that you unplug the unit for a few minutes and then plug it in again. Wait a few more minutes after plugging it in for the IHD to communicate with your Smart Meter and upload recent data. If you have any further queries, you can contact Alice Solar City on 8950 4350.