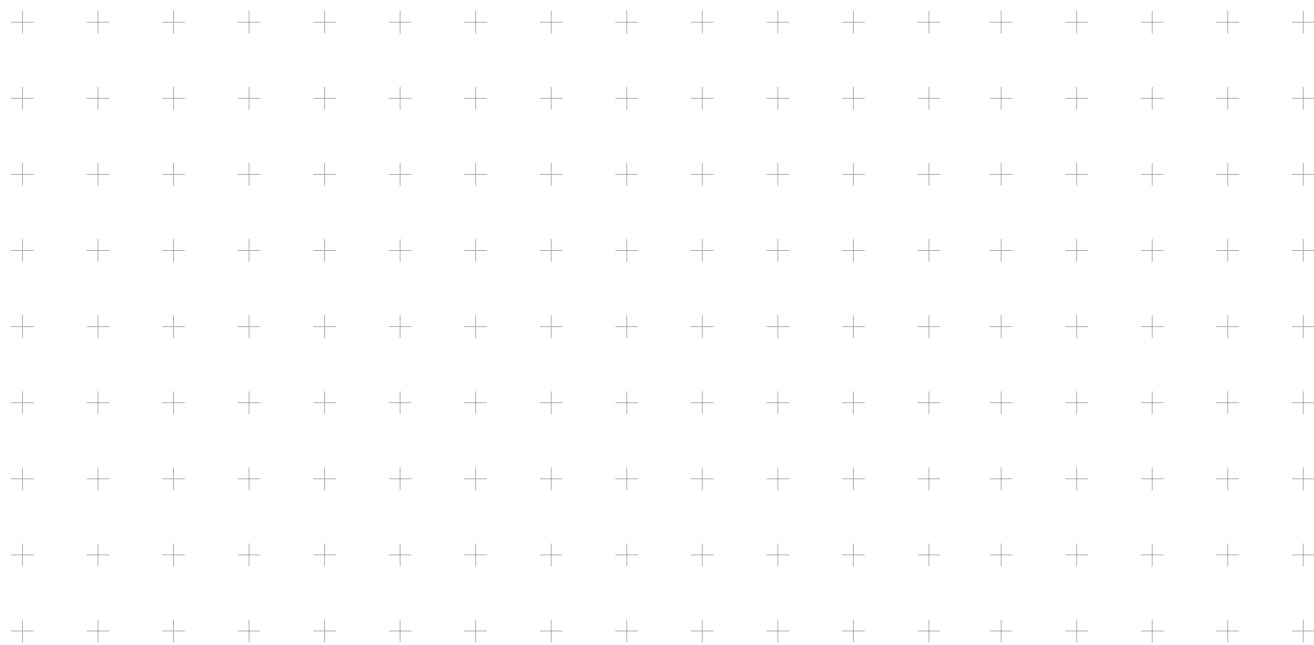




iEM User Guide



Introduction.....	2
Global Header Functions.....	2
Help.....	2
Home.....	2
Logout.....	2
Selecting Sites and Services.....	3
Series.....	3
Group.....	3
Tabular.....	3
CSV.....	3
Calendar.....	3
Max Demand.....	3
Special CSV.....	3
Selecting Date Range and Data Streams.....	4
Selecting a Date From the Presets.....	4
Today.....	4
Yesterday.....	4
This Week.....	4
Last Weeks.....	4
This Month.....	4
Last Month.....	4
Set To Last Read.....	4
Selecting a Date Manually.....	5
Selecting the Duration.....	5
Selecting Data Streams.....	6
Channels.....	6
Threshold.....	6
Aggregation.....	6
Graph Size.....	6
Graph Type.....	6
Estimated File Size.....	6
Meter Data Formats.....	7
Series Chart Display.....	7
Group Chart Display.....	8
Tabular Data Display.....	9
CSV Exports.....	9
Calendar Display.....	10
Maximum Demand Display.....	11
Optional Services.....	11
Special CSV Exports.....	11
Frequently Asked Questions.....	12
Login.....	12
General.....	12
Glossary.....	13



Introduction

Welcome to the Interactive Energy Manager (iEM) User Guide. This documentation will help you to use the features of the iEM correctly.

The iEM allows you to view meter data in a variety of graph and tabular formats, as well as export it in comma separated value (CSV) formats. You can look at monthly profiles, compare channel data between multiple sites and view the raw data values in a variety of time-based aggregations.

This system makes use of JavaScript and cookies to add many useful functions, and if either of these is disabled then functionality is reduced. It is recommended that your screen resolution is set to at least 800 x 600. Tested platforms include IE 4/5/6, Mozilla 1+, Netscape 4.5+. Other browsers, such as Opera, Konqueror and earlier versions of Netscape/IE should work but the designers cannot guarantee the pages to function or display as intended.

Global Header Functions

At the top of every page you will find 3 icons:



Help

Opens this 'User's Guide' document in a new browser window.

Home

Takes you to the service provider's homepage.

Logout

Logs you out, ends your session and returns you to the login page.

You can select individual sites by clicking on the checkbox to the left of each site.

You can select or deselect all sites by clicking on the checkbox in the list header.

This page will present you with a list of all the sites you are able to view.

After select a site, choose a service (Series, Group, Tabular, etc.) from one of these icons.

If you have signed up for any of our optional services, you will see them displayed here.

METER POINT	METER ID	CONNECTION POINT	FIRST READ DATE	LAST READ DATE
<input type="checkbox"/> Site A	07454321	VABC001234	Wed 7 Feb 2001	Tue 12 Jul 2005
<input type="checkbox"/> Site B	07454322	VABC001235	Thu 11 Jun 2001	Tue 24 Feb 2005
<input type="checkbox"/> Site C	07454323	VABC001236	Thu 11 Jun 2001	Tue 17 Jul 2005
<input type="checkbox"/> Site D	07454324	VABC001237	Thu 11 Jun 2001	Tue 12 Jul 2005

Series

Generate a line or bar chart for the selected sites. Series charts are ideal for analysis of usage trends, and for viewing data with fine granularity.

Group

Generate a stacked bar chart for the selected sites, for comparison of sites. Typically used to compare total power usage between two or more sites with low granularity.

Tabular

Generate a tabular view of the raw data for the selected sites. Useful for checking specific data values.

CSV

Generate a comma separated text file containing the raw data for the selected sites. This data can be imported into spreadsheets or other modelling tools for more detailed analysis.

Calendar

Generate a month's worth of day-long mini-charts in a familiar calendar layout. This view makes it easy to see daily and weekly trends in power usage.

Max Demand

Generate a bar chart of the raw kW/ kvar/kVA data representing the average demand for the measured interval. This is useful for pinpointing peak values.

Special CSV

This module generates CSV files in a different format to the (standard) CSV module.

Selecting a Date from the Presets

You can use the preset buttons to automatically set the start and end dates. The presets use your local time.

You will be asked to select a date range. The dates picked are inclusive; that is to say the range will be from 00:00 on the start date to 24:00 on the end date. There are a few options for selecting date ranges:

SELECT DATE RANGE*

Presets:

Start Date: 01 Feb 2004

Duration: 1 Day after start date
 1 Week after start date
 1 Month after start date
 Custom Range

End Date: 29 Feb 2004

Today

Set the start and end date to your current date, a duration of 1 day.

Yesterday

Set the start and end date to yesterday's date, a duration of 1 day.

This Week

Set the start date to the most recent Monday, with duration of 7 days. If "this week" is not yet over (i.e. this interval ends in the future) then a full data set will not yet be available.

Last Week

Set the start date to the Monday before last, with duration of 7 days.

This Month

Set the start date to the first of the current month, with duration of 1 month. Remember that not all months have the same number of days!

Last Month

Set the start date to the first of the previous month, with duration of 1 month. Remember that not all months have the same number of days!

Set To Last Read

Set the end date to the last recorded interval to have been read. If more than one meter is selected, then the end date will be set to the earliest of the last recorded intervals for all the selected meters. This button does not alter the start date.

Selecting a Date Manually

You can use the drop-down boxes to select the day, month and year for the start and end dates. You can also choose your dates from a calendar by clicking the button next to either date.

You will see a calendar like this:



The < and > change the selected month and, the << and >> change the selected year. If you click and hold any of these buttons, you will see a drop-down that looks this:



Once you have found the desired date, simply click on that date. The date will be updated and the calendar will disappear.



Selecting the Duration

The duration calculator takes the last date you set (either the start or end date) and adjusts the opposite endpoint.

SELECT DATE RANGE*

Presets:

Start Date:

Duration: 1 Day after start date
 1 Week after start date
 1 Month after start date
 Custom Range

End Date:

For example, if you wanted to select the 4 weeks ending on July 21st 2003:

1. Set the end date by using the drop-down boxes or the calendar picker as described above
2. Click the Week before end date radio button
3. Type '4' into the box.

You will notice that the start date is updated as you adjust the duration settings.

If you set the start date (instead of setting the end date) any subsequent changes to the duration settings will now update the end date.

You can see which value will be adjusted by looking at the text next to the duration boxes. If the boxes show "... before end date" (as shown on the previous page) then the duration selector will adjust the start date for you. If the boxes show "... after start date" then the duration selector will adjust the end date for you.

Selecting Data Streams

Depending on the service you selected earlier you will be presented with some or all of the options shown here:

SELECT DATA STREAMS

Channels Wh va

Channels W var VA PF

Threshold kW

Aggregation

Graph size Small Medium Large

Graph Type

Estimated file size: 4.24 KB

Channels

This allows you to choose which channels are shown in the output.

- PF** Power Factor
- W** Watts
- Wh** Watt hours
- Var** Volt Amp Reactive
- Varh** Volt Amp Reactive hours
- VA** Volt Amps
- Vah** Volt Amp hours

Threshold

If given a non-zero value, a horizontal line will be drawn at the chosen Watt value. This is useful for finding spikes above a given threshold.

Aggregation

Choose the aggregation period for the data. Note that changing the aggregation period will affect average values. Aggregation smooths the data and will result in lower average values.

Graph Size

Choose the size of the output graphs. Please note that a screen size of 800 x 600 or larger is recommended.

Small

400 x 240 graph. Suitable for small screen resolutions (< 800 x 600)

Medium

600 x 350 graph. Suitable for the most common screen resolutions (800 x 600 - 1024 x 768)

Large

1000 x 600 graph. Suitable for high screen resolutions (> 1024 x 768).

Graph Type

Choose the style of the output graph.

Note: Power Factor is rendered as a line graph irrespective of this setting, as it is not a quantitative measurement.

Bar graph

Line graph

Estimated File Size

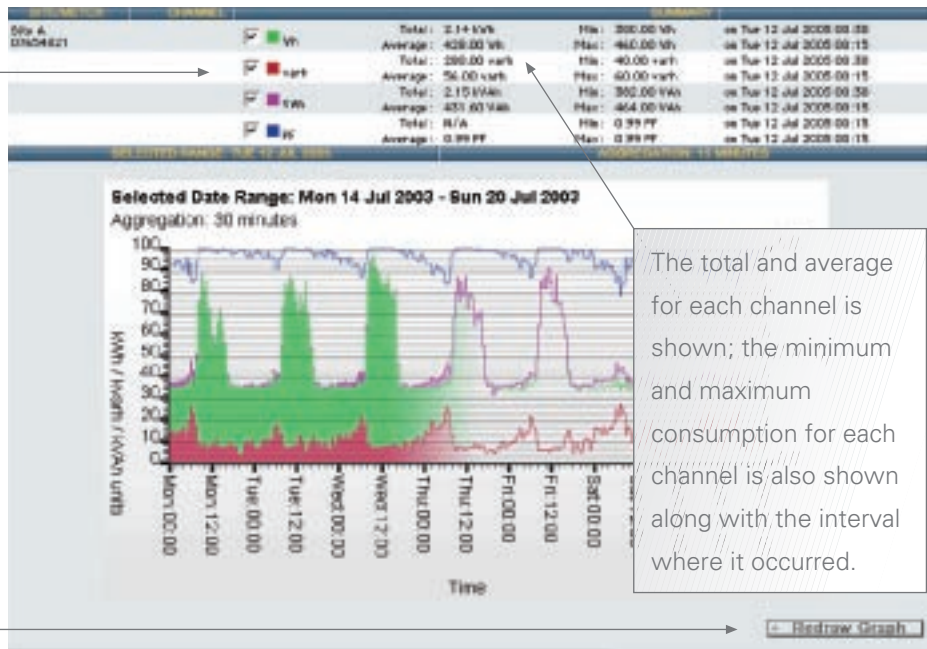
When exporting a comma separated value (CSV) file, this value indicates an approximation of the expected size of the file.

Series Chart Display

If you select the **Series** service, then a chart similar to this will be displayed.

From here you are able to refine your channel selection; you can deselect channels on a per site basis using the checkboxes to the left of the colour legend.

Use the **Redraw Graph** button to update the graph with these changes.

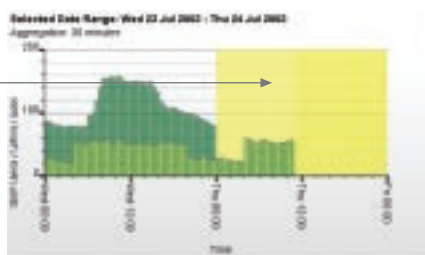


The total and average for each channel is shown; the minimum and maximum consumption for each channel is also shown along with the interval where it occurred.

NOTE: this is a special composite screenshot to show both the bar graph option (left side) and the line graph option (right side).

You can also adjust the date range and data stream options using the standard panel below the graph (not shown). A full description on how to use the calendar control is available in the **Selecting Date Range** and **Data Streams** section of this help.

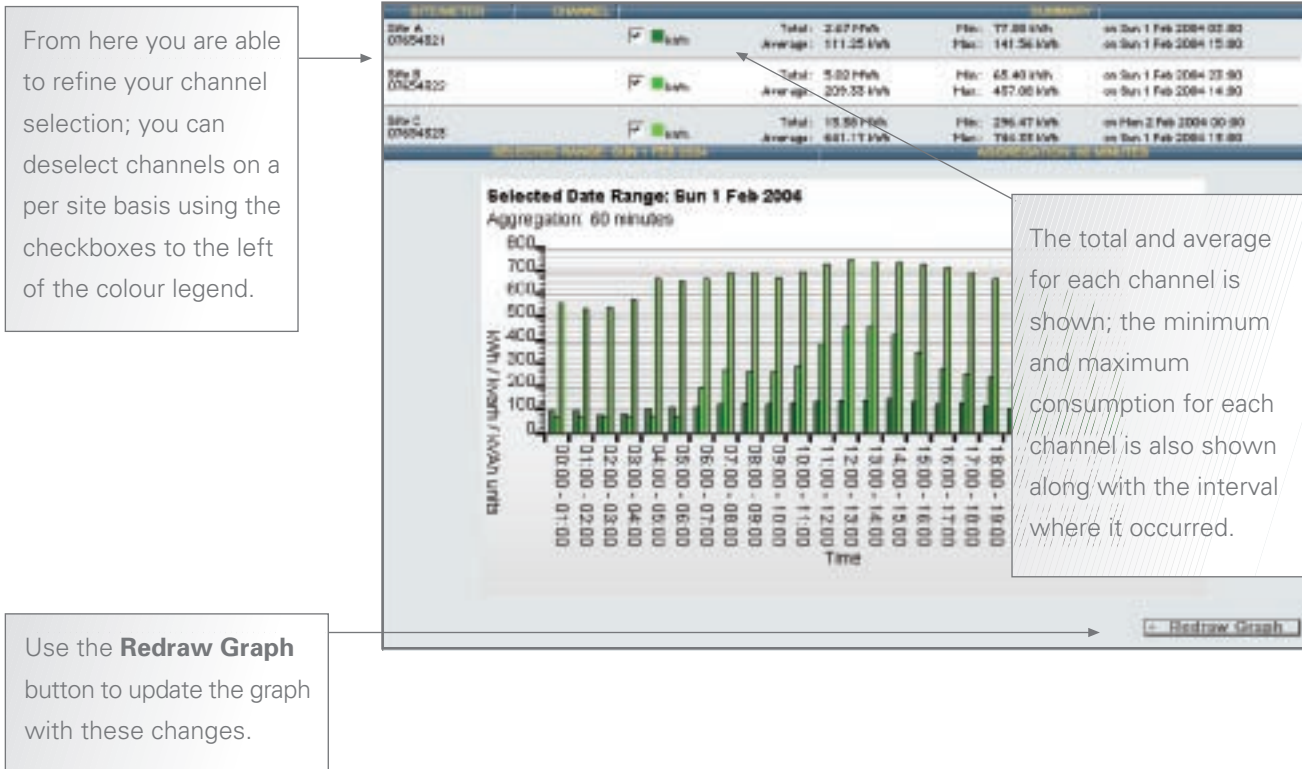
A yellow highlighted background indicates that data is not available for one or more of the selected meters.



In this example we can see that data is available for both sites until Thursday at 00:00. From then until Thursday at 11:00 data is only available for the lighter series. Thereafter there is no data at all.

Group Chart Display

When the **Group** service is selected, a chart similar to this will be displayed:



You can also adjust the date range and data stream options using the standard panel below the graph (not shown). A full description on how to use the calendar control is available in the **Selecting Date Range** and **Data Streams** section of this help.



Tabular Data Display

When the **Tabular** service is selected, a table similar to the one below will be displayed. This table has a 4 hour (=240 minutes) aggregation period and shows a single day.

The total and average for each channel is shown; the minimum and maximum consumption for each channel is also shown along with the interval where it occurred.

Site Name	Channel	Total	Min	Max	Interval
Site A 07054821	HFwh	Total: 5.02 HFwh	Min: 257.07 HFwh	Max: 1.60 HFwh	on Sun 1 Feb 2004 04:00
		Average: 657.85 kVh			on Sun 1 Feb 2004 16:00
	lnwh	Total: 1.74 lnwh	Min: 75.05 lnwh	Max: 621.28 lnwh	on Mon 2 Feb 2004 00:00
		Average: 280.87 kwh			on Sun 1 Feb 2004 16:00
Site B 07054822	HFwh	Total: 15.38 HFwh	Min: 2.10 HFwh	Max: 2.95 HFwh	on Mon 2 Feb 2004 00:00
		Average: 2.56 HFwh			on Sun 1 Feb 2004 16:00
	lnwh	Total: 9.02 lnwh	Min: 1.20 lnwh	Max: 1.82 lnwh	on Mon 2 Feb 2004 00:00
		Average: 1.43 lnwh			on Sun 1 Feb 2004 16:00

DATE	TIME	53000 kWh	53000 kWh	53000 kWh
Sun 1 Feb 2004	04:00	267077.06		1351952.80
Sun 1 Feb 2004	08:00	358264.06		1709177.80
Sun 1 Feb 2004	12:00	1181188.80		1799064.80
Sun 1 Feb 2004	16:00	1480704.80	621284.00	2996252.00
Sun 1 Feb 2004	20:00	978876.06	384427.00	2120889.80
Mon 2 Feb 2004	00:00	305960.06	79076.80	2106336.00

Meter serial number

CSV Exports

The **CSV** service displays the total, average, minimum and maximum consumption for each of the selected channels for each selected site(s). From here you are also able to view the data as a graph or export the data to a spreadsheet.

Date	Time	53000 kWh	53000 kWh	53000 kWh
1-Jan-04	01:00	42.58	32.28	53.417
1-Jan-04	02:00	44.68	34.4	56.373
1-Jan-04	03:00	46.6	34.94	58.244
1-Jan-04	04:00	41.9	32.06	52.771
1-Jan-04	05:00	51.48	36.42	63.06
1-Jan-04	06:00	55.1	37.68	66.752
1-Jan-04	07:00	62.3	39.78	73.917
1-Jan-04	08:00	60.48	62.52	96.101
1-Jan-04	09:00	62.8	55.52	99.691
1-Jan-04	10:00	63.18	66.96	100.813
1-Jan-04	11:00	93.9	60.32	111.805
1-Jan-04	12:00	102.34	64.62	121.034
1-Jan-04	13:00	96.58	61.62	116.36
1-Jan-04	14:00	105.7	67.1	125.199
1-Jan-04	15:00	109.58	66.58	128.414

Meter serial number

NOTE: The time interval data presented is derived directly from the collected meter information. On occasions the on-line presentation of this data may vary when compared to the information on the electricity supplier's invoice.

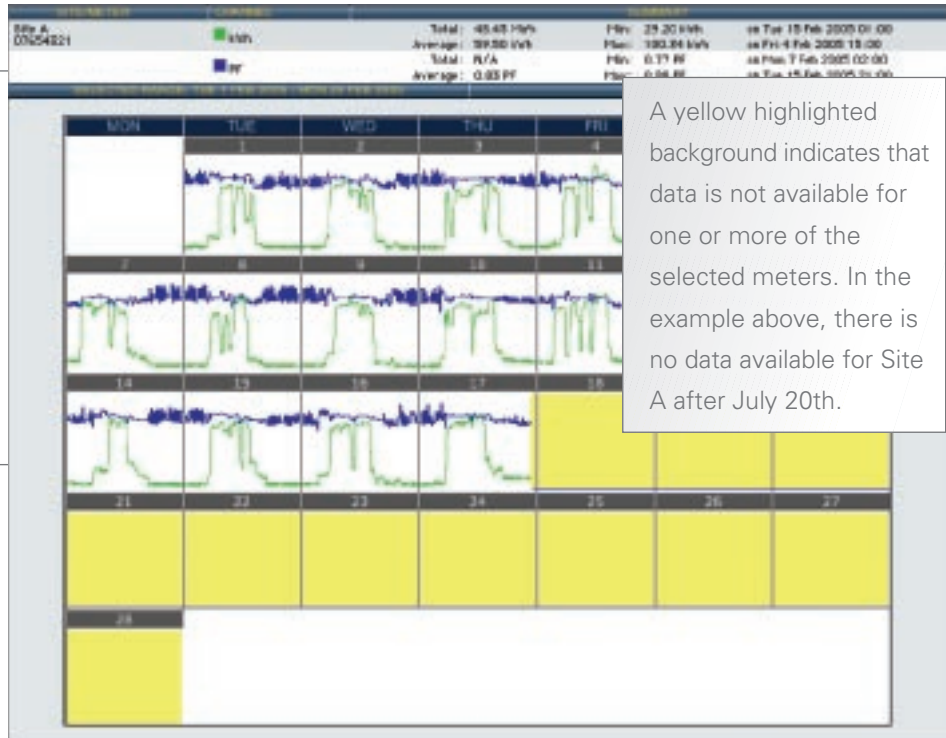


Calendar Display

When the **Calendar** service is selected, a set of charts similar to those below will be displayed.

The total and average for each channel is shown; the minimum and maximum consumption for each channel is also shown along with the interval where it occurred.

You can view any single day by simply clicking on the day that you are interested in. Doing this will take you to the Series Graph display view and from there you can modify the view as detailed in that section.



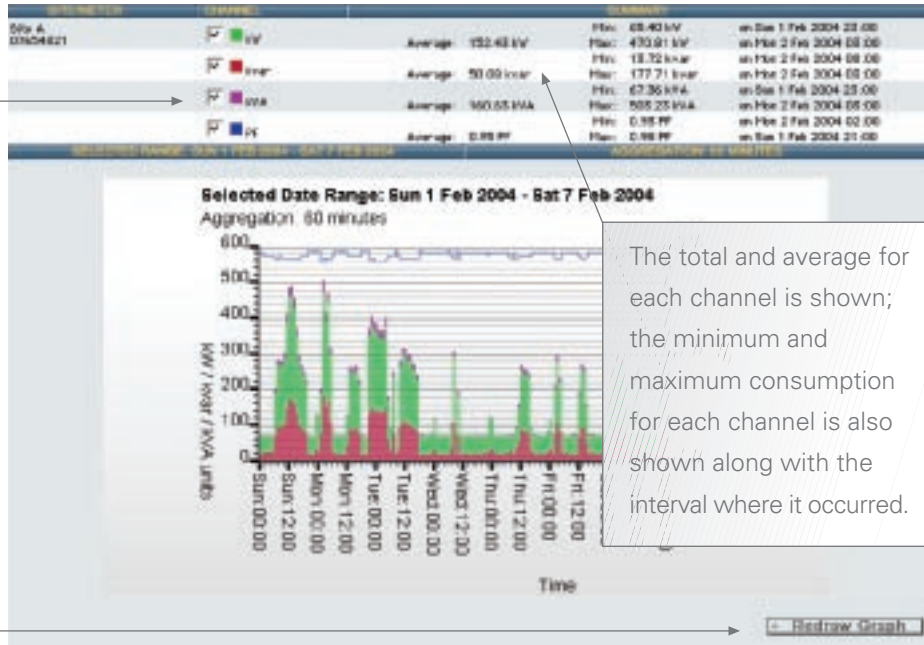
A yellow highlighted background indicates that data is not available for one or more of the selected meters. In the example above, there is no data available for Site A after July 20th.

Maximum Demand Display

If you select the **Max. Demand** service, then a chart similar to this will be displayed.

From here you are able to refine your channel selection; you can deselect channels on a per site basis using the checkboxes to the left of the colour legend.

Use the **Redraw Graph** button to update the graph with these changes.



The total and average for each channel is shown; the minimum and maximum consumption for each channel is also shown along with the interval where it occurred.

You can also adjust the date range and data stream options using the standard panel below the graph (not shown). A full description on how to use the calendar control is available in the Selecting Date Range and Data Streams section of this help.

Optional Services

Special CSV Exports

The **Special CSV** service displays the total, average, minimum and maximum consumption for each of the selected channels for each selected site(s) in an alternative format to the **CSV** (standard) option. From here you are also able to view the data as a graph or export the data to a spreadsheet.

Meter serial number

	A	B	C	D	E	F	G	H
1	00:30	01:00	01:30	02:00	02:30	03:00	03:30	04:00
2	510004	20.48	22.08	24	28.96	23.6	23	20.96
3	510004	26.96	22.64	23.24	23.92	26.88	26.4	23.28
4	510004	26.24	24.7	24.76	24.88	24.88	24.76	24.64
5	510004	26.24	26.96	26.06	29.9	26.86	26.62	26.68
6	510004	22.48	26.1	26.02	29.9	26.74	26.6	26.62
7	510004	26.94	24.48	24.62	24.46	27.36	26.58	24.36
8	510004	32.2	31.18	31.22	27.06	31.1	27.84	30.92

NOTE: The time interval data presented is derived directly from the collected meter information. On occasions the on-line presentation of this data may vary when compared to the information on the electricity supplier's invoice.

Login

Why can't I log in to the iEM system?

You need a username and password provided by Energy Intellect to use the iEM service. Make sure you type your username and password correctly, and with the correct case.

The iEM accepts my username and password, but I keep getting sent back to the login screen. Why?

The iEM system needs to set a "cookie" in your browser. Please ensure your browser accepts cookies.

General

The calendar buttons don't work. Why?

These buttons depend on JavaScript being enabled in your browser. If you have a browser that doesn't support JavaScript, or you have disabled JavaScript, you will not be able to use these buttons.

I changed my graph parameters, but the graph stays the same. Why?

Some browsers don't respect the 'no cache' directive that iEM sends with its graphs. This results in the image being cached by the browser. You may be able to fix this by setting your browser to 'check pages against server every time'. If all else fails, try holding down shift and pressing the 'refresh' button on your browser's toolbar.

I clicked on 'CSV Export' earlier, and by browser asked me to save the file to disk. Now it displays the CSV on screen. Why?

Internet Explorer 5 seems to behave unpredictably with CSV exports. Shutting down and restarting your browser will often fix the problem.

The iEM isn't displaying correctly.

You may be using a browser that doesn't render tables and style-sheets correctly. We recommend using a version 4+ browser. Tested platforms include IE 4/5/6, Mozilla 1+, Netscape 4.5+. Other browsers, such as Opera, Konqueror and earlier versions of Netscape/IE should work but the pages may not display as intended by the designers.

Term	Definition
Active Power	Is the product of the voltage and the component of current power in phase with the voltage and is normally measured in kilowatt-hours (kWh).
Connection Point	A Connection Point is the energy markets small supply node which connects an energy user (or a group of closely physically located energy users) to the Local Distribution Network. It represents a physical or logical connection point in the system to which one or more meters are attached (via meter points). Connection points are required for data to be available to the outside world. (In the New Zealand Market a Connection Point is an ICP. In the Australian Market a Connection Point is a NMI)
Energy	The work which electric power does in a given period; it is power multiplied by time. Commercially, energy is measured in kilowatt-hours (called units).
Datastream	A datastream is a flexible way of defining how metered data is computed. Possible datastreams include a single channel in a single meter, aggregations over hundreds of meters and complex virtual meter arrangements with changes in meters over time.
GWh	Gigawatt hour. One gigawatt hour is equal to one million kilowatt hours.
ICP	Installation Control Point. Means a point of connection on a local network or embedded network which the distributor nominates as the point at which a retailer will be deemed to supply electricity to a consumer. (ICP in New Zealand market).
Installation	An installation is a record of the period when a specific meter was in place at a Meter Point.
Interval Meter	An Interval Meter is a device which measures energy usage (in a number of engineering values) and logs these measurements in intervals for primarily remote/automatic interrogation. (See also Meter).
kW	A standard unit of electrical power equal to one thousand watts, or to the energy consumption at a rate of 1000 Joules per second.
kWh	The electrical energy consumed by a 1,000 watt (1 kilowatt) heater in an hour is one kilowatt-hour (kWh). A kilowatt-hour is also known as a unit of electricity and as such is the basis of retail sales of electricity.
kVAh	Kilovolt-ampere hour.
kvarh	Kilovolt-ampere reactive hour.

Term	Definition
MWh	Megawatt hour. One megawatt hour is equal to 1,000 kilowatt hours.
Meter	A Meter is a device which measures energy usage (in a number of engineering values) and logs these measurements for interrogation. (See also Interval Meter/logger).
NMI	National Metering Identifier. Means a point of connection on a local network or embedded network which the distributor nominates as the point at which a retailer will be deemed to supply electricity to a consumer. (NMI in Australian market).
Power	The rate at which electrical energy is produced, or consumed. Power is measured in watts, or more conveniently in kilowatts (thousands of watts) or megawatts (millions of watts or thousands of kilowatts).
Power Factor	A measure of how effectively electricity is being used.
Reactive Power	Reactive power is the product of the voltage, current and the sine of the phase angle, and is measured in kiloVolt-Amps reactive (kVAr).
TOU Metering	Metering which stores information relating to electricity consumption during TOU periods. (NZ Market 30 minutes, Australian Market 15 minutes).
Wh	Watt Hour = current x voltage x power factor / 1000
Whole Current Metering	A whole current meter measures the total load going through a switchboard, without the need for CT's.
Wholesale Supply Point (WSP)	A Wholesale Supply point is a large supply node on an energy network, which connects the Long Haul Transmission Grid to the Local Distribution Network. It is the physical point at which electricity passes from the transmission grid into a network company's network. (GXP in New Zealand Market and TNI in Australian Market).