



ONNL USB CONNECT

USER GUIDE





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1.0 USB CONNECT VERSION 2

1.1 KNOWN SOFTWARE ISSUES

Windows 7

- Latest tenxhid.dll only works intermittently on Windows 7, and is currently being updated.
- Windows 7 version has been installed with an earlier version of the tenxhid.dll, although disconnecting the USB Connect while the program is running the port will lock up & the PC requires a reboot

1.2 WHAT CHANGES HAVE BEEN MADE?

- Runs as NT Service so do not need to run the OWL USB Connect 2 user interface to continue to record your energy, when your USB Connect is connected to a USB port on your PC
- Encryption has been removed from the SQLite database so that the raw data can be accessed/manipulated using SQLite tools
- Supports transmitter part numbers CMR113, CMR119, and CMR130.
- View the historical data without the need of the USB Connect being connected to a USB port

1.3 WHAT HAPPENS TO DATA IN MY OLD DATABASE?

- If you have been running the OWL Energy Monitor Software then the database will be unencrypted and the data added to the OWL USB Connect 2 database.
- If you are re-installing OWL USB Connect 2 and had saved a copy of the old database, the old database can be used by stopping the service "The OWL USB Connect", renaming/deleting the be.db file in "C:\Documents and Settings\All Users\Application Data\2SE", renaming the old database as be.db, and starting the "The OWL USB Connect" service.

1.4 WHAT DO I DO IF I DO NOT WANT MY OLD DATA KEPT?

- If you have been running the OWL Energy Monitor Software and do not want to use the old data then go to "C:\Program Files\2SE\The Owl Home Energy Monitor" and rename/delete the database file be.db

1.5 WHERE IS THE DATABASE KEPT?

- The database file, all saved databases and all exported data files can be found in "C:\Documents and Settings\All Users\Application Data\2SE"

2.0 GETTING STARTED

For users already using the following release of software or previous releases of the software, which is found in the top right hand corner of the user interface screen, will need to un-install the program before installing the latest release.

- be: 02:00:06EN / fe: 02:00:04EN

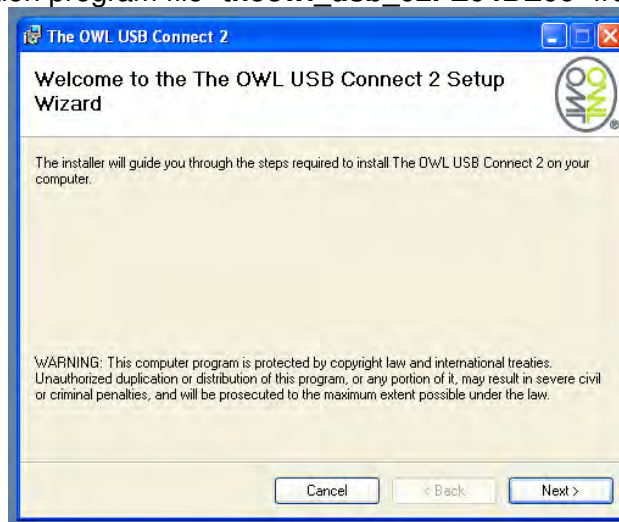
2.1 UNINSTALLING EARLIER VERSIONS

- Go to start menu and open Control Panel
- In Control Panel, open “Add/Remove Software”
- Allow “Add/Remove Software” to populate list of programs.
- Scroll down list and highlight “The OWL Energy Monitor”
- Select the remove button, and the software will be removed leaving a copy of the database in the following folder:- C:\Program Files\2SE\The Owl Home Energy Monitor”

2.2 INSTALLING OWL USB CONNECT 2

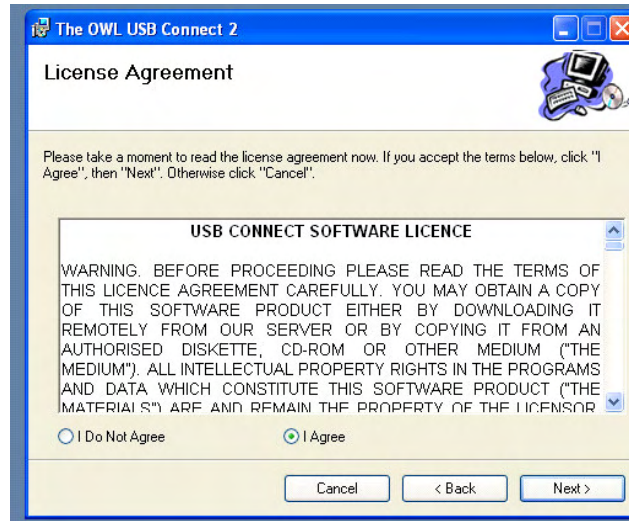
If you have been running the OWL Energy Monitor Software and do not want the old data added to the unencrypted database generated by OWL USB Connect 2 software then go to C:\Program Files\2SE\The Owl Home Energy Monitor” and rename/delete the database file “be.db”

Run the installation program file “**theowl_usb_02FE04BE06**” from the CD



Proceed to the License Agreement Acceptance by pressing the [Next>] key.

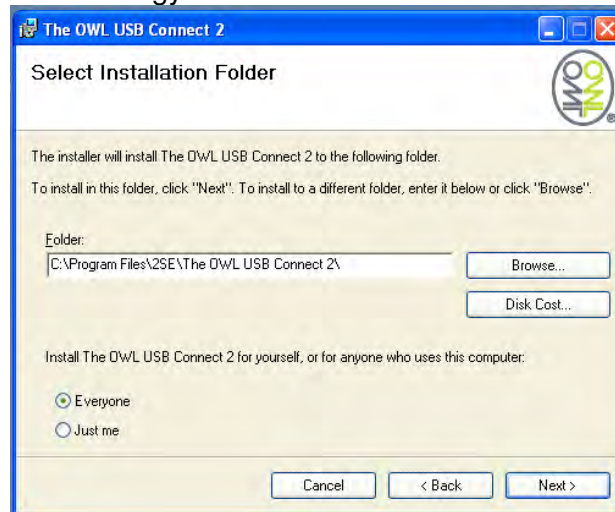
2.2.1 License Agreement



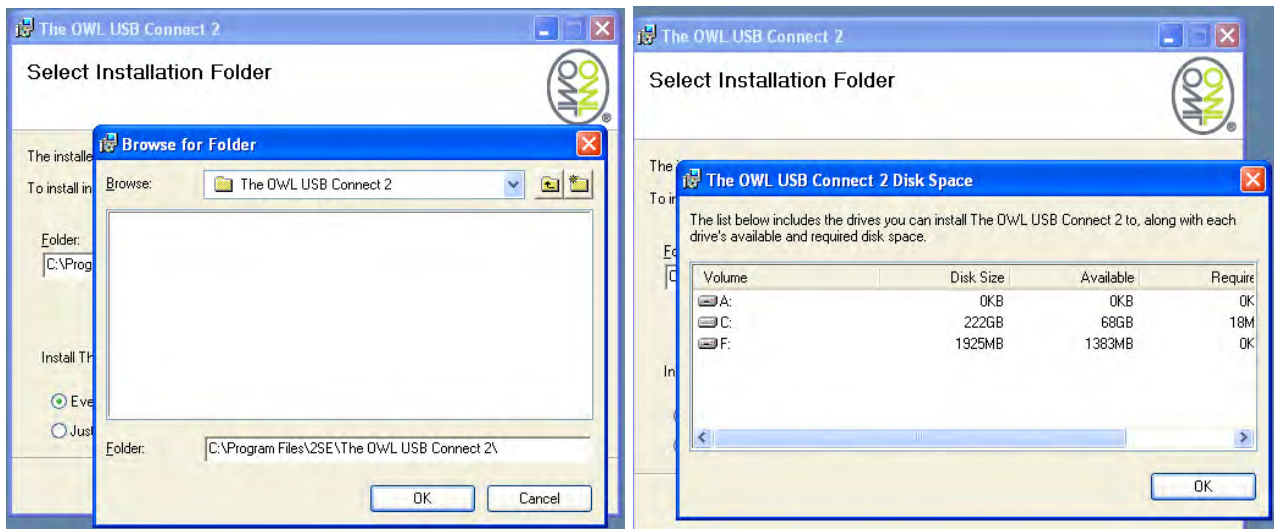
Select "I Agree" and press [Next>] to move to next stage of installation
A copy of the License Agreement is available on the CD

2.2.2 Software Installation

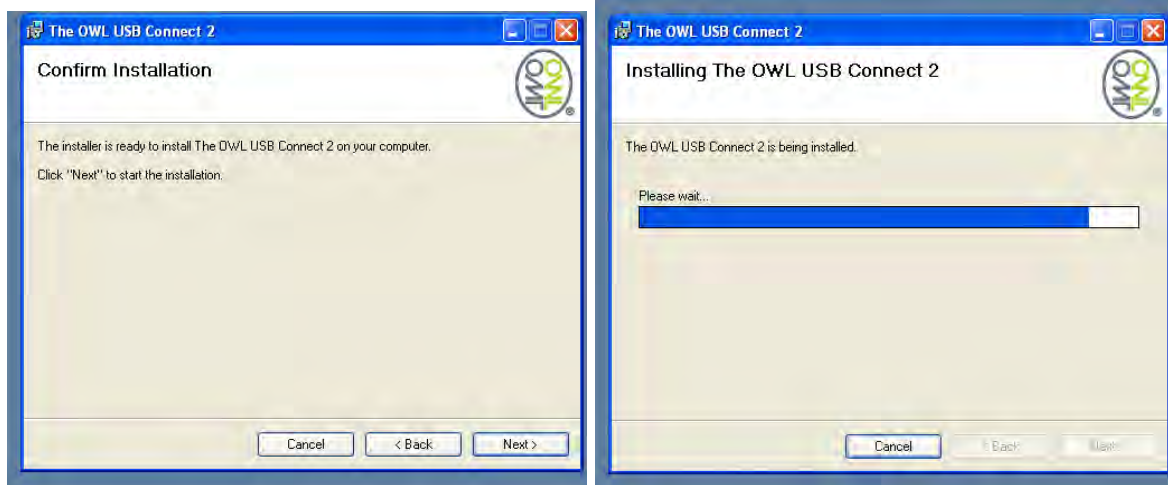
The installation of the OWL Home Energy Monitor program will default to "C:\Program Files\2SE\The Owl Home Energy Monitor".



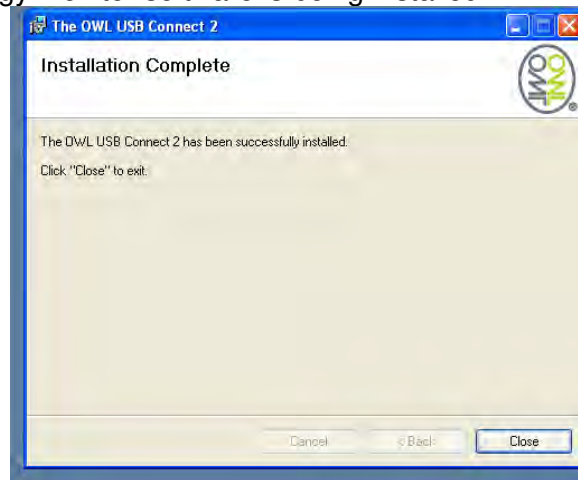
A different folder location can be used to install The OWL Home Energy Monitor application by selecting the [Browse...] button.
Check to see which disk has enough room to load the program using the [Disk Cost...] button



Confirm that you are ready to proceed with the installation by selecting [Next>] button.



The Owl Home Energy Monitor software is being installed.



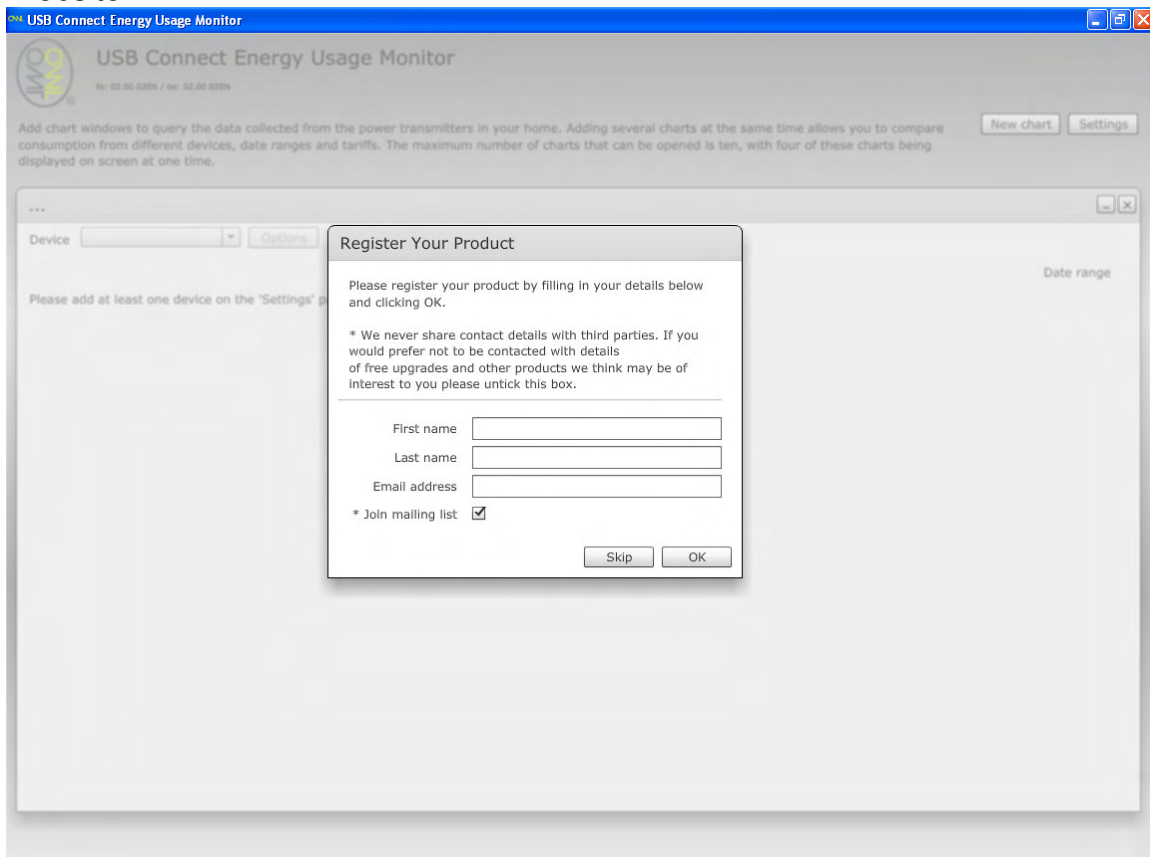
The OWL Home Energy Monitor has been successfully installed. To exit from the installation select the [Close] button.

3.0 USING USB CONNECT

From the START Menu select, go to Programs, and select “The OWL USB Connect 2”.

3.1 PRODUCT REGISTRATION

Product registration is required to validate your product guarantee and to inform you via e-mail of any software updates that will be accessible as a download from the website.



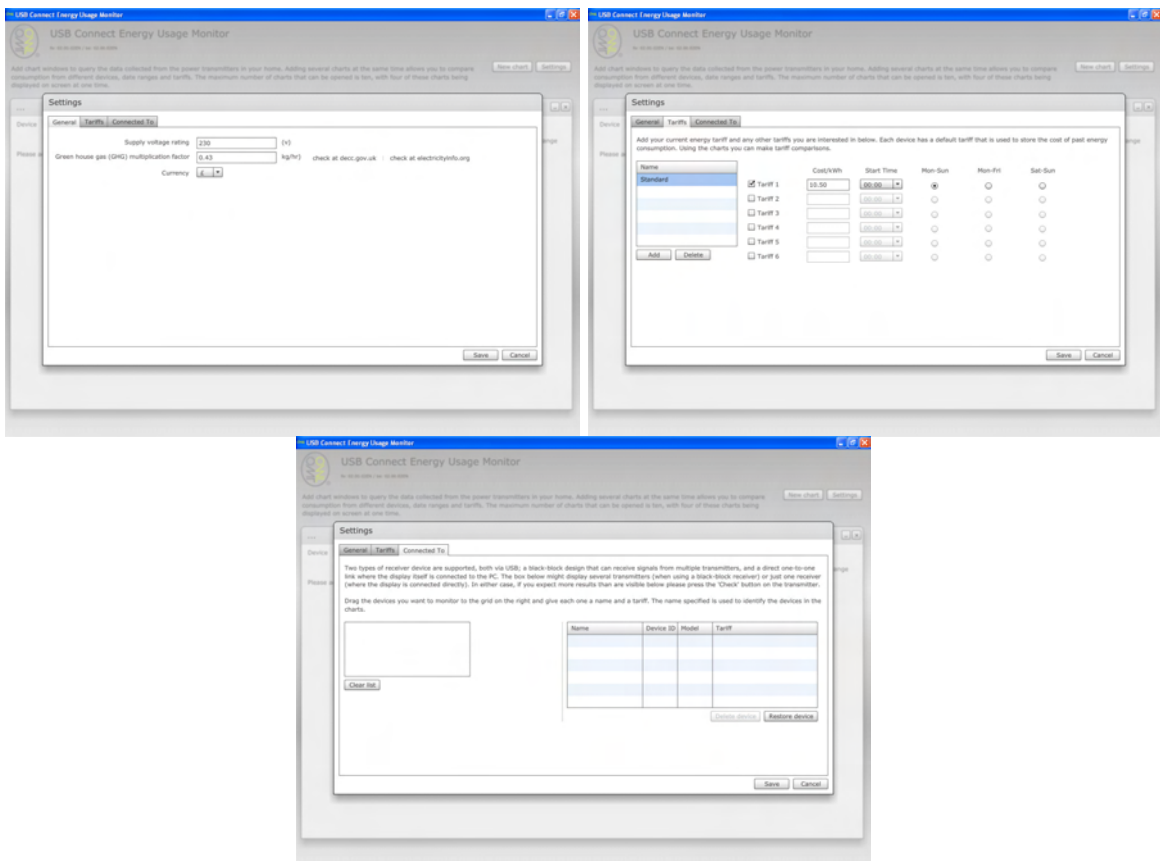
* Un-check the box if you do not wish to be added to our Newsletter mailing list where you will receive information about new product releases and promotions.

3.2 SETTINGS

It is recommended to setup your tariffs, voltage, currency & GHG settings, so that when connecting the USB Connect to your USB Port for the first time your settings get used with initial data stored.

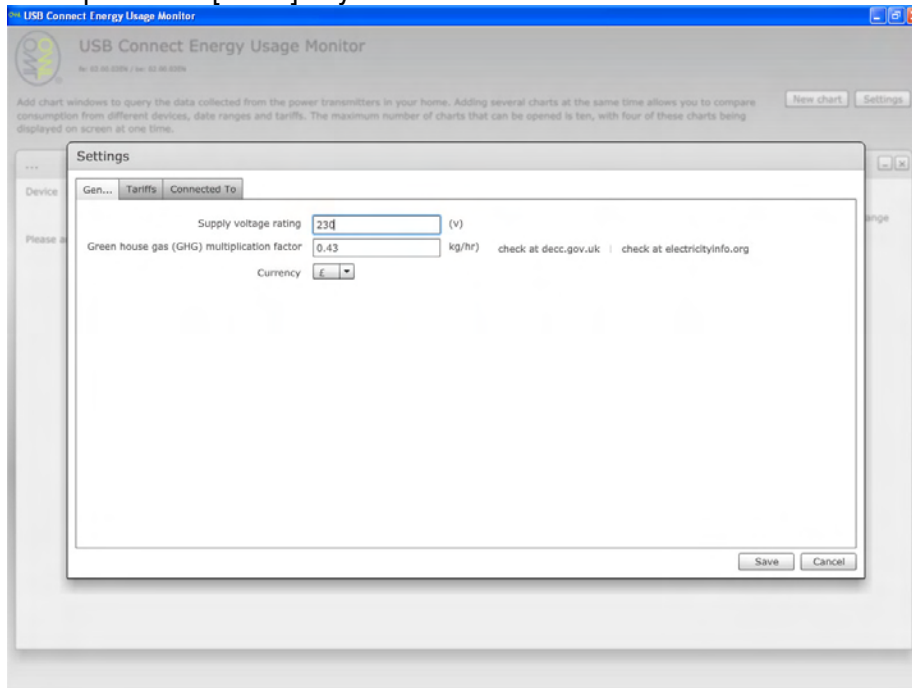
Select the settings button and the settings screen is split into 3 tabs:-

- General
 - For setting up the voltage, greenhouse conversion factor, and currency.
 - Links to related websites that could help you finding out the conversion factor relating to your utility company.
- Tariffs
 - For adding cost of electricity for current plan.
 - Set up other cost of electricity plans that can be used when using Tariff Comparison
- Connected to
 - For adding, naming, and selecting appropriate tariff for up to 10 sensor units that can be monitored using the USB Connect.

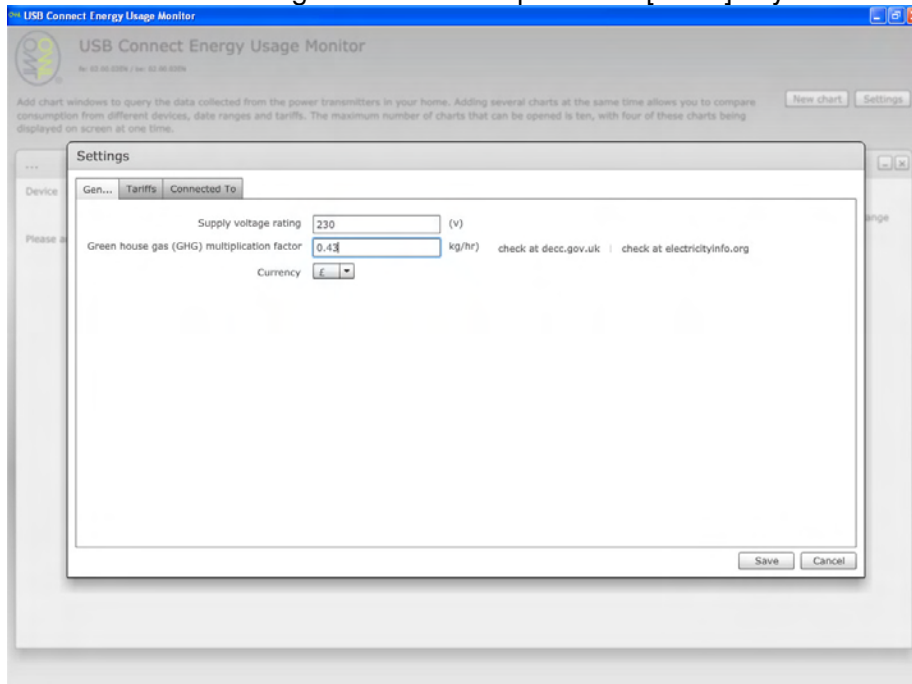


3.2.1 General

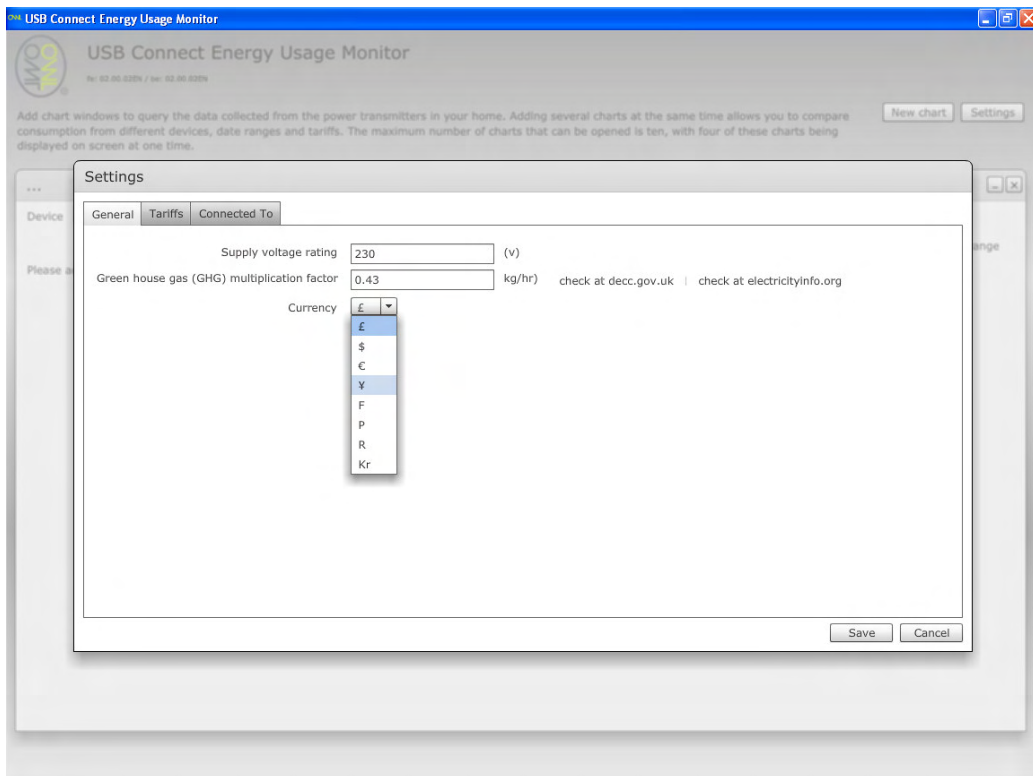
To change the Supply Voltage rating place cursor over the current value and select. The box will be highlighted by a blue line around the edge of the Supply Voltage rating box. Change the value and press the [Enter] key.



To change the Greenhouse gas multiplication factor place cursor over the current value and select. The box will be highlighted by a blue line around the edge of the Greenhouse gas multiplication factor box. Change the value and press the [Enter] key.



For greenhouse multiplication or conversion factors use the links to take you to related websites that could help you with finding out the multiplication or conversion factor relating to your utility company.



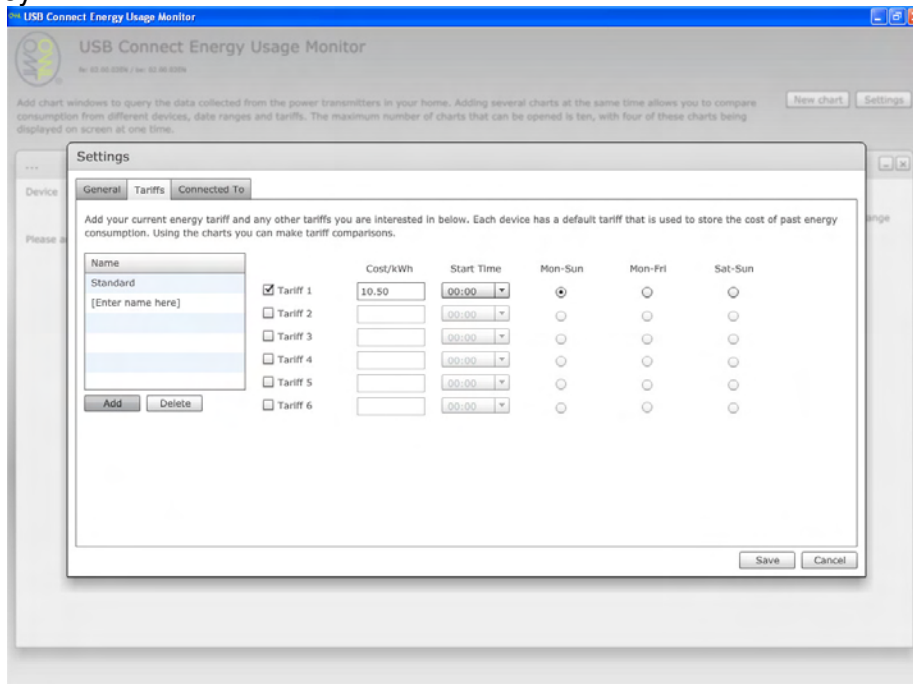
Use the pull down menu to select currency setting.

3.2.2 Tariffs

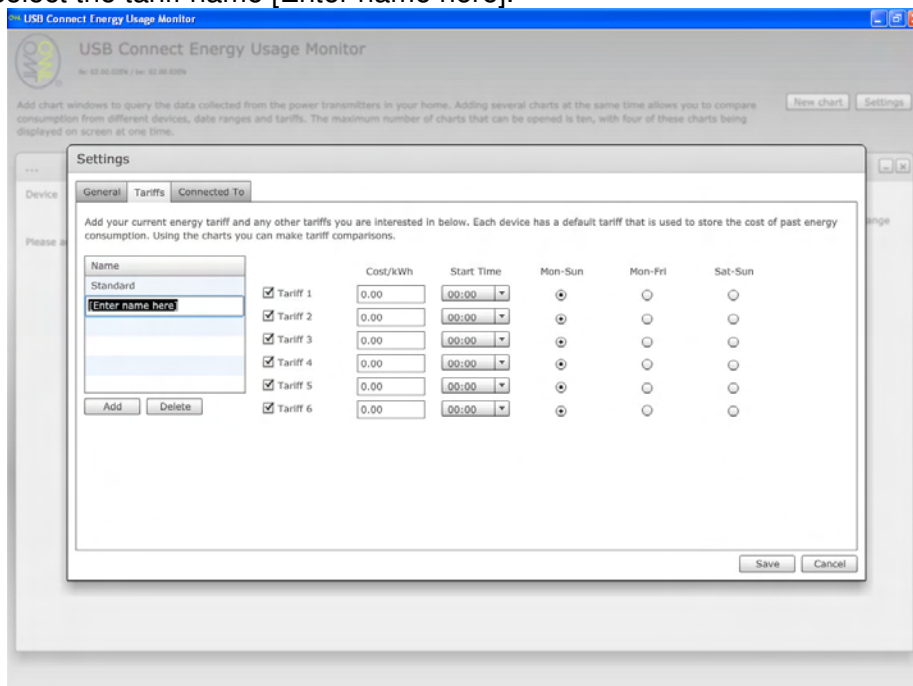
A nominal tariff has been preset within the software but this can be changed or removed as required.

For Tariff plans that only have a single band then start time should be left set at 0:00.

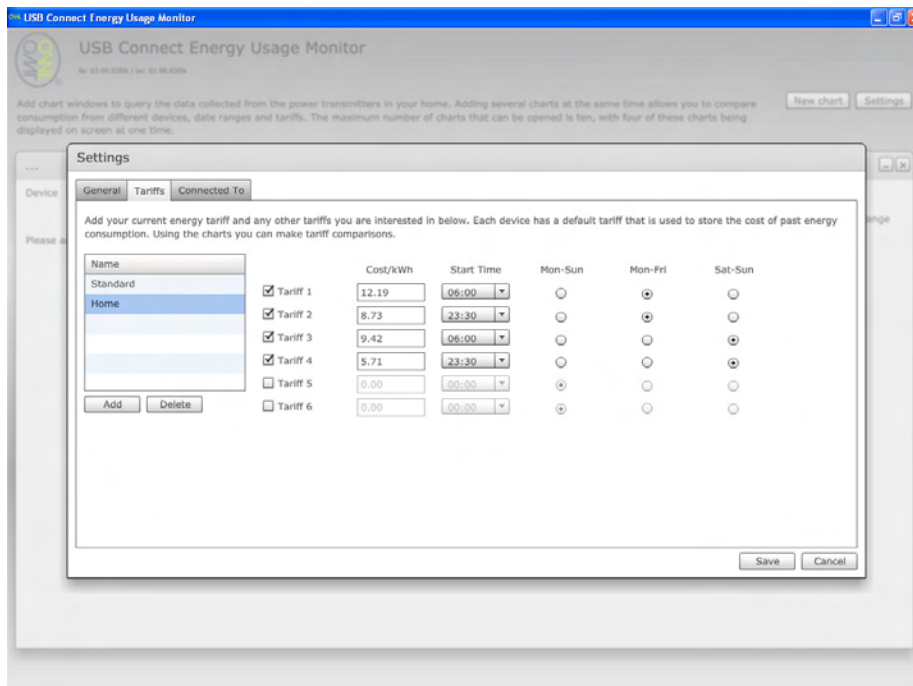
To introduce your current tariff plan or additional tariff plans for comparison purposes select the [Add] key.



To edit the tariff name, rates, and start times applied to weekly, weekday only, or weekend only rate, select the tariff name [Enter name here].



Enter a name for the new tariff. All six possible tariff rates/start times will be checked. Uncheck those not required



Repeat as required for other Tariff plans.

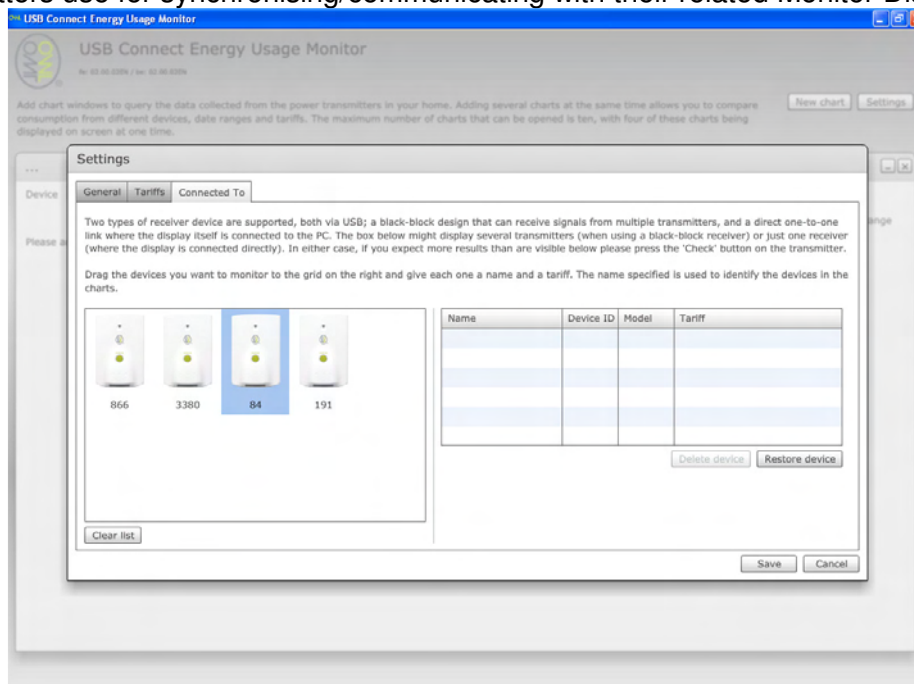
3.2.3 Connected To

Plug in your OWL USB Connect to a USB Port on your computer, using the USB lead provided.

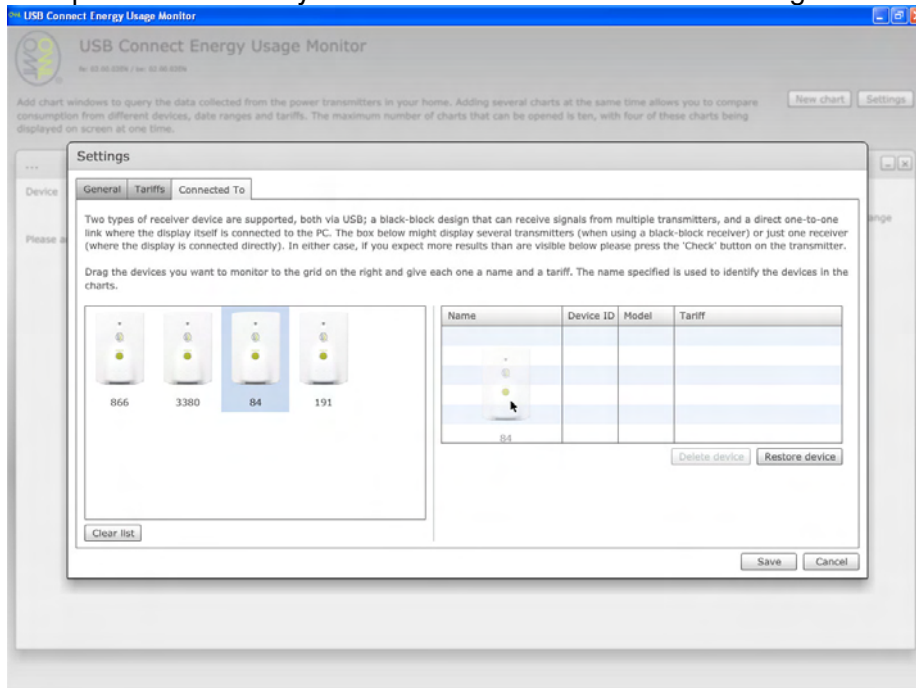
As the receiver detects transmitters in range it will add them to the Sensors window and can identify up to 10.

If your transmitter is taking a little while to be found then press and hold the check button on the transmitter to get transmission every 2seconds over a 30second period.

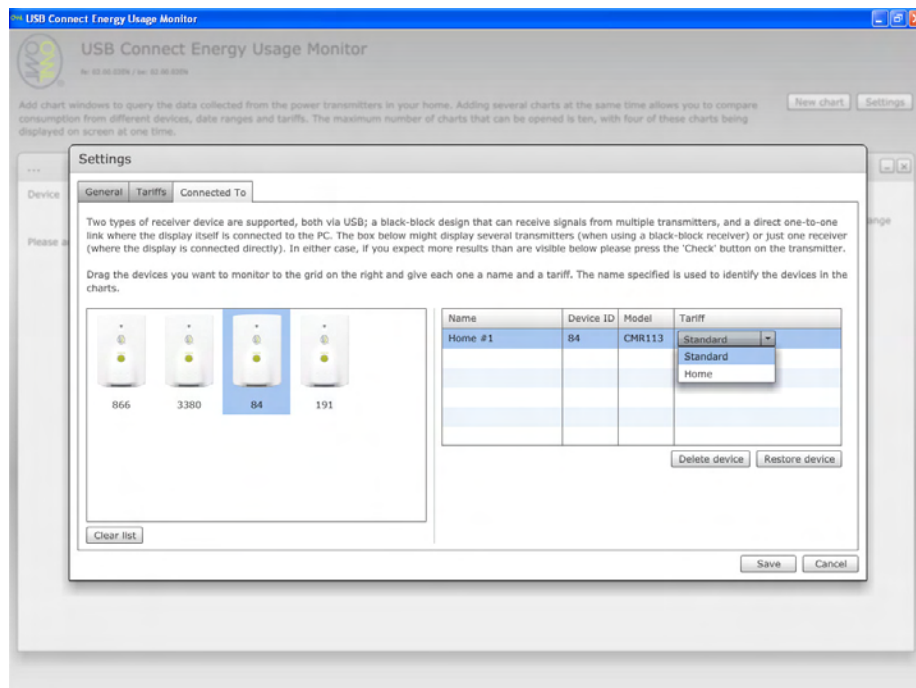
The USB Connect identifies the transmitters by the Device ID and Model Number that the transmitters use for synchronising/communicating with their related Monitor Display.



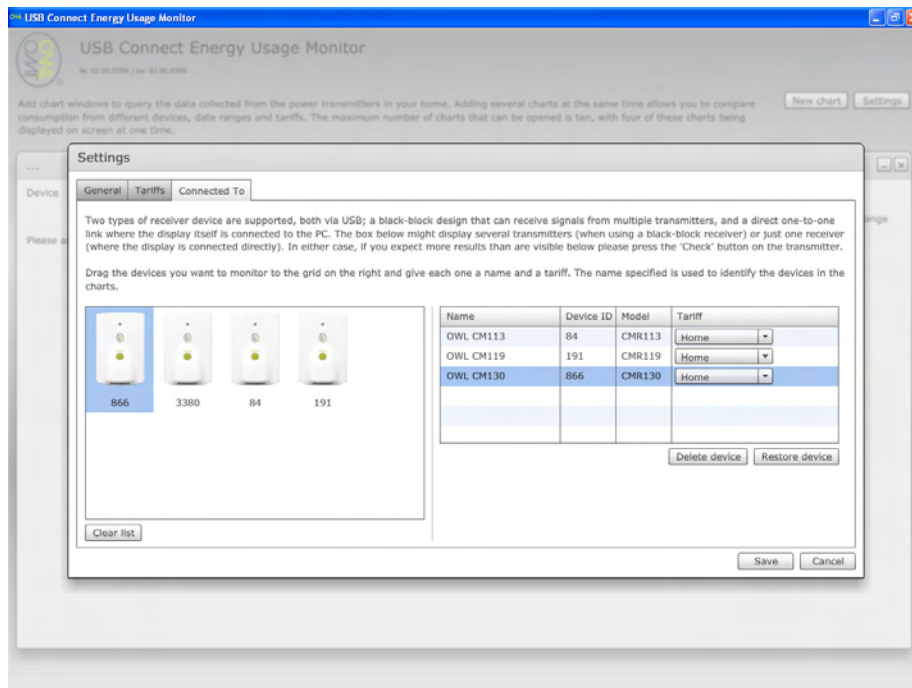
Drag and drop the sensor unit you wish to monitor into the table alongside the sensors found.



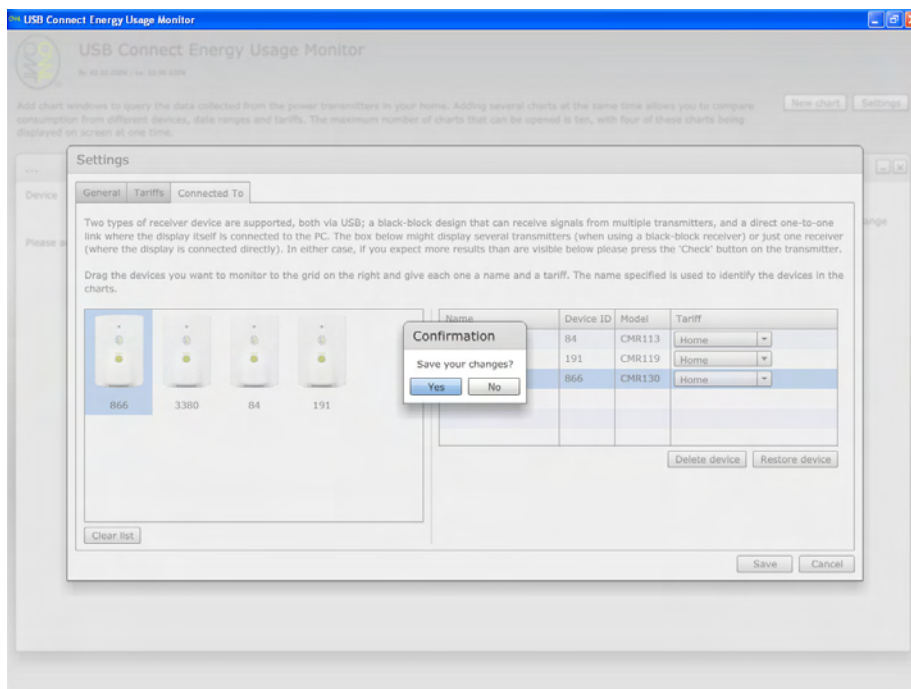
Insert a name to identify this sensor, and select the appropriate tariff to be associated to that transmitter.



Repeat as required for additional transmitter units.



Save settings by selecting <Save> button or select <Cancel> button to leave settings window without saving any of these changes.



3.3 VIEWING THE DATA

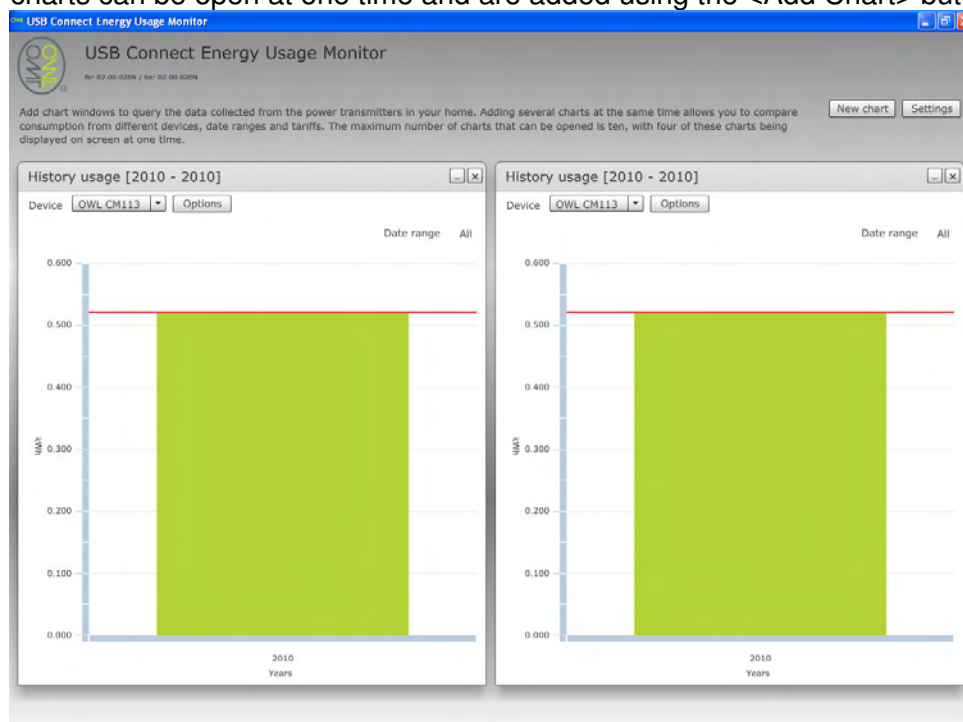
After leaving the settings page for the first time, there may be a slight delay in a history chart appearing for the first transmitter in your list until sufficient data has been added to the database.

Navigate through the chart options using the different option through the <Options> button.

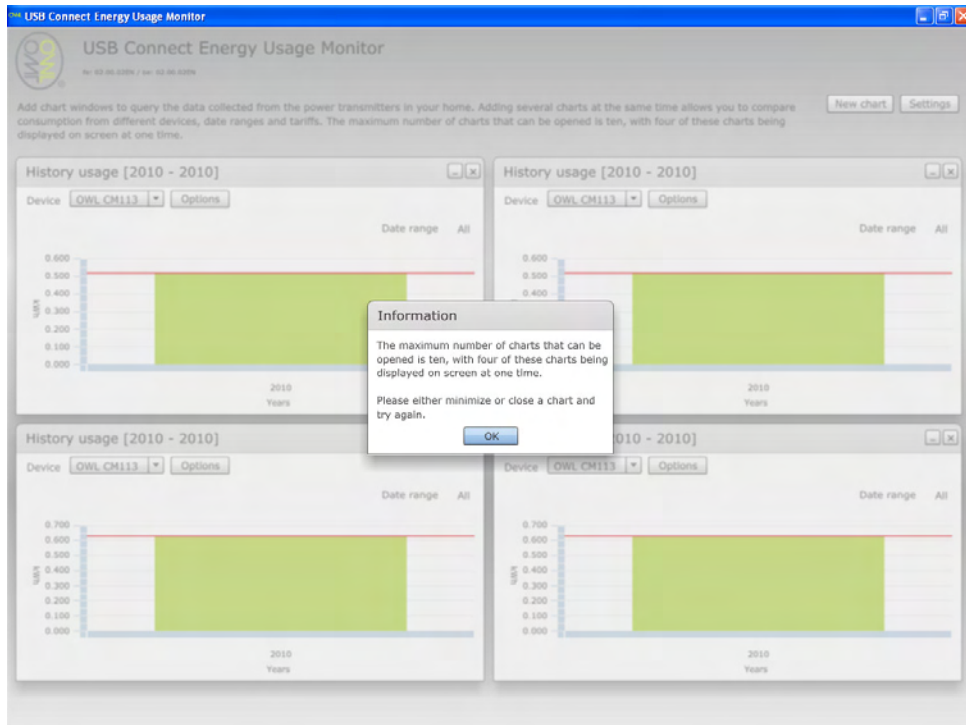
- View “Live” Data as a cost, as kW & CO2 emissions using line charts / bar charts / numeric display.
- View “Historical” Data as an accumulated cost, as accumulated kWh & accumulated CO2 emissions using line charts / bar charts / numeric display.
 - Review data down to a per minute usage by clicking on the data point/bar
- View data point values by passing cursor over the data point/bar
- Maximum / Minimum markers
- Compare tariffs
- Open multiple charts (10) with a maximum of 4 being displayed at any one time
- Export raw data from database into a .csv file for use with spreadsheet packages such as Excel.
 - Live display → Exports Data Displayed (Last 2 Minutes)
 - Historic Display → Exports Data Displayed (Years, Months, Days, Hours, Minutes)
 - Historic Display → Exports Data between 2 dates based on chart time base (ie Day will export Daily Data between 2 dates)
 - Historic Display → Exports All Data
- Simple printout of the chart displayed

3.3.1 Adding Charts

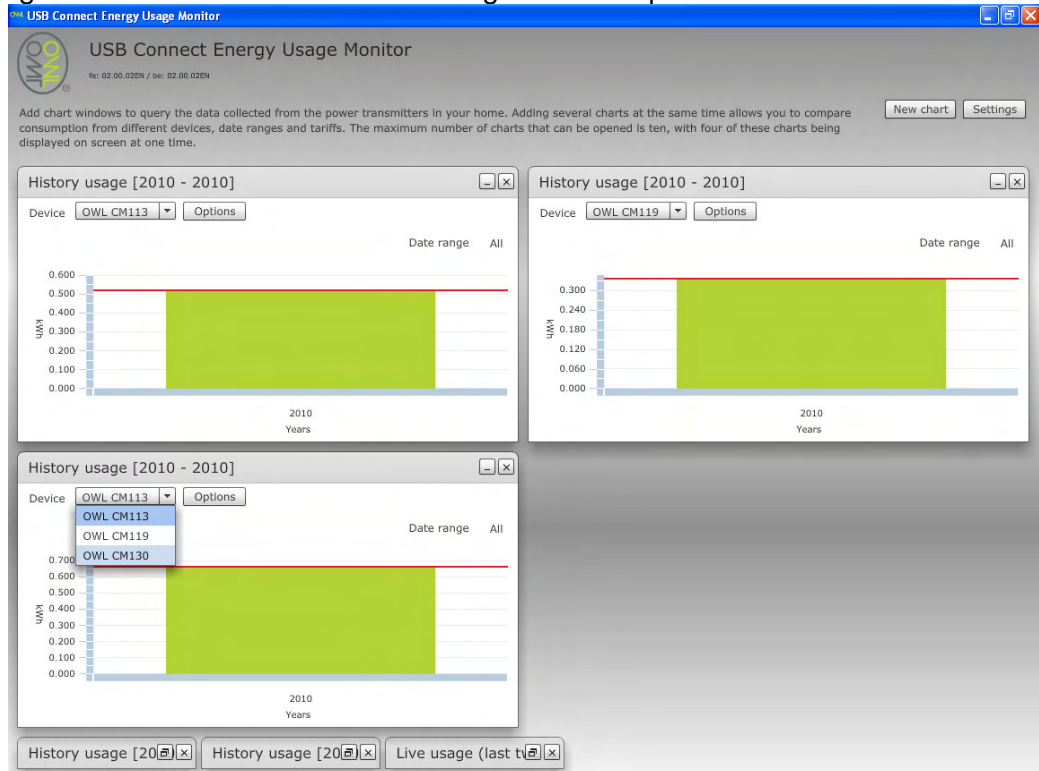
Up to 10 charts can be open at one time and are added using the <Add Chart> button.



If 4 charts are already being display on the screen, one of these will need to be minimised to allow the next chart to be added.

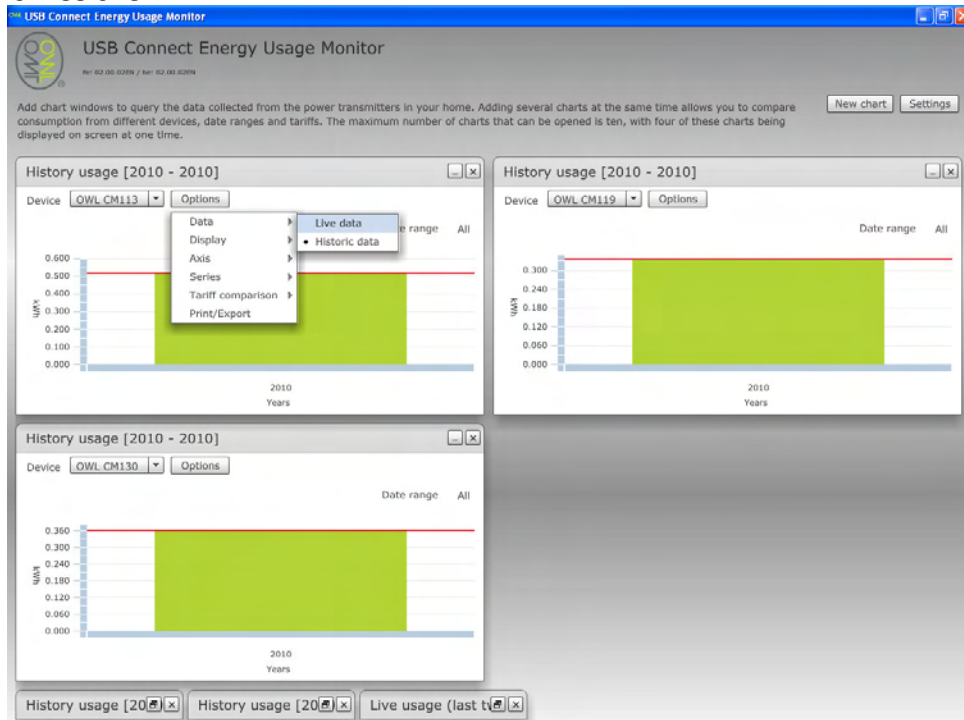


Applying charts to transmitters is done using the device pull down menu

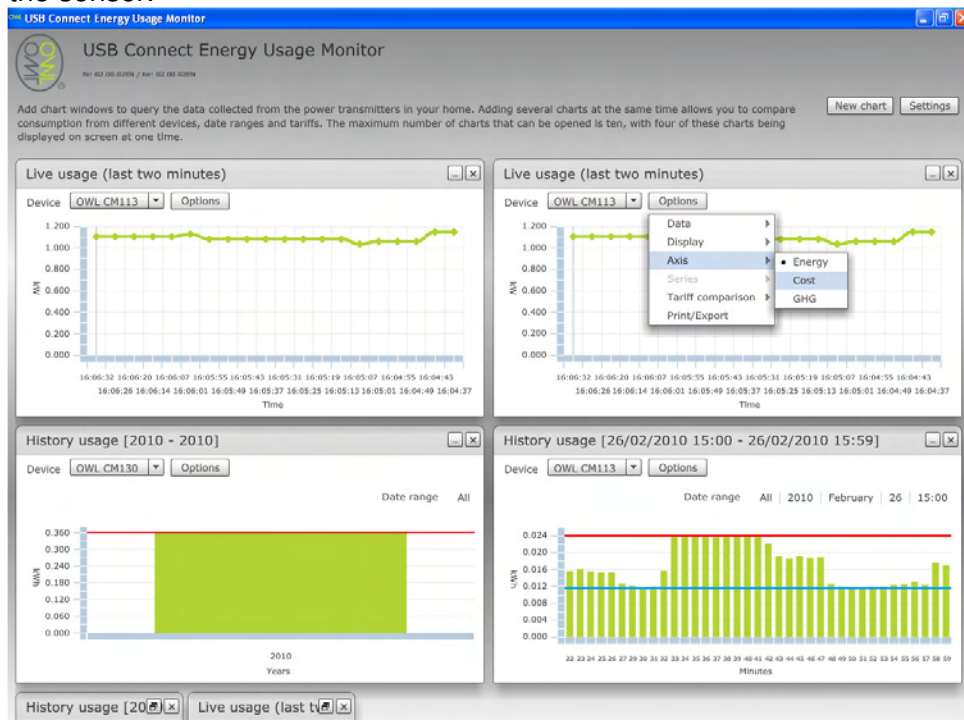


3.3.2 Live Data Charts

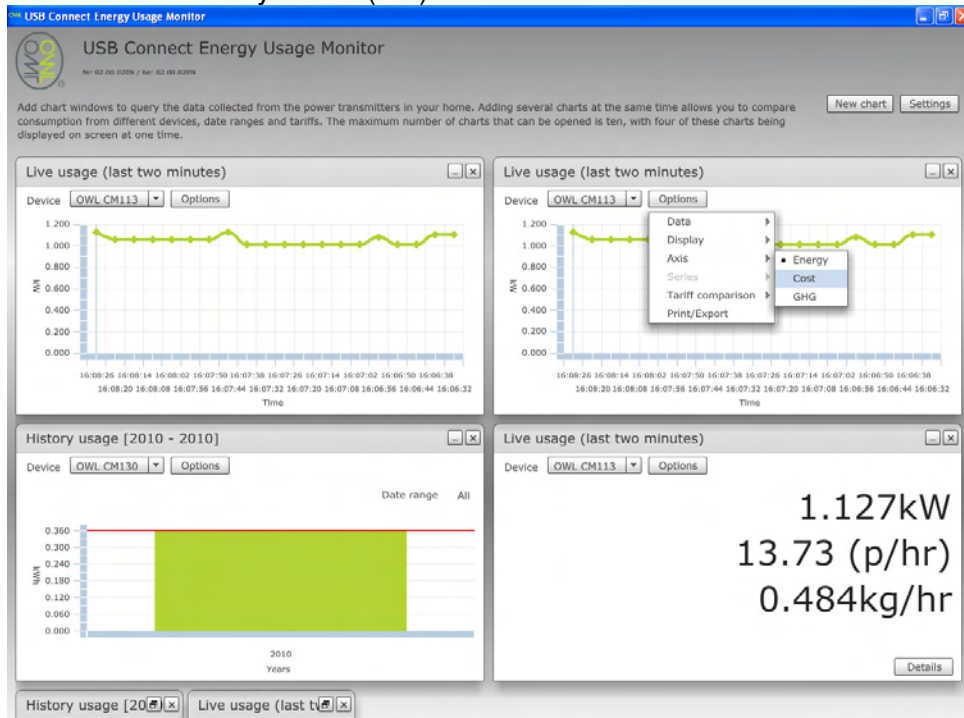
See the electricity as it is being consumed displayed in chart form showing it as cost, power and CO2 emissions.



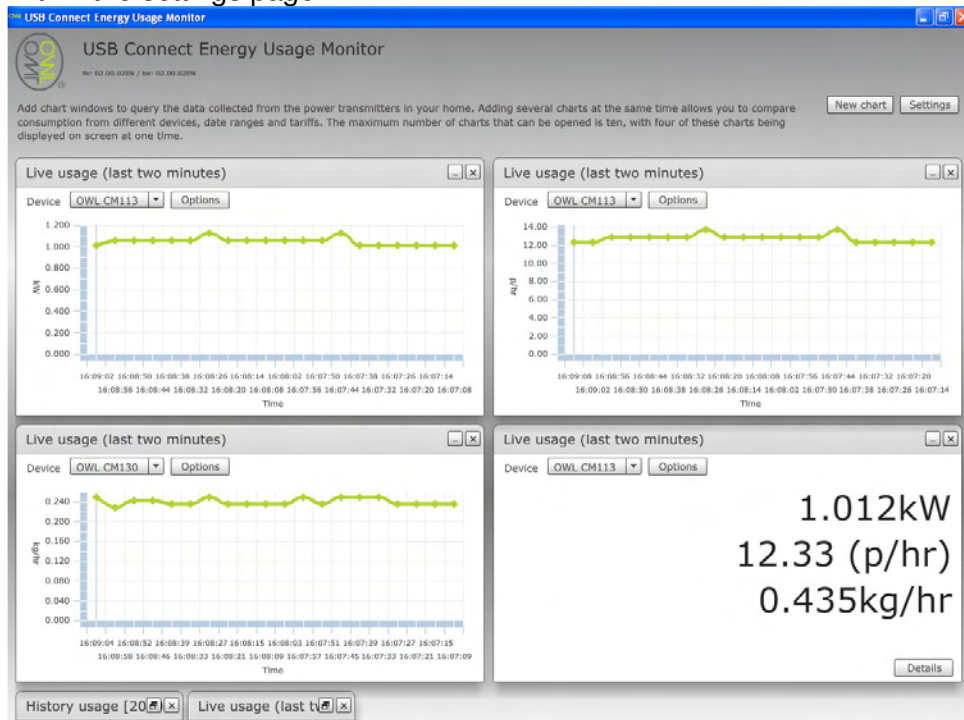
- Energy Chart → Shows the electricity in use in kW, calculated from the voltage setting you have used within the settings page and the electrical current reported by the sensor.



- Cost Chart → Shows the cost of electricity as it is being used, calculated from the tariff setting you have set up for the sensor within the settings page and the calculated electricity in use (kW).



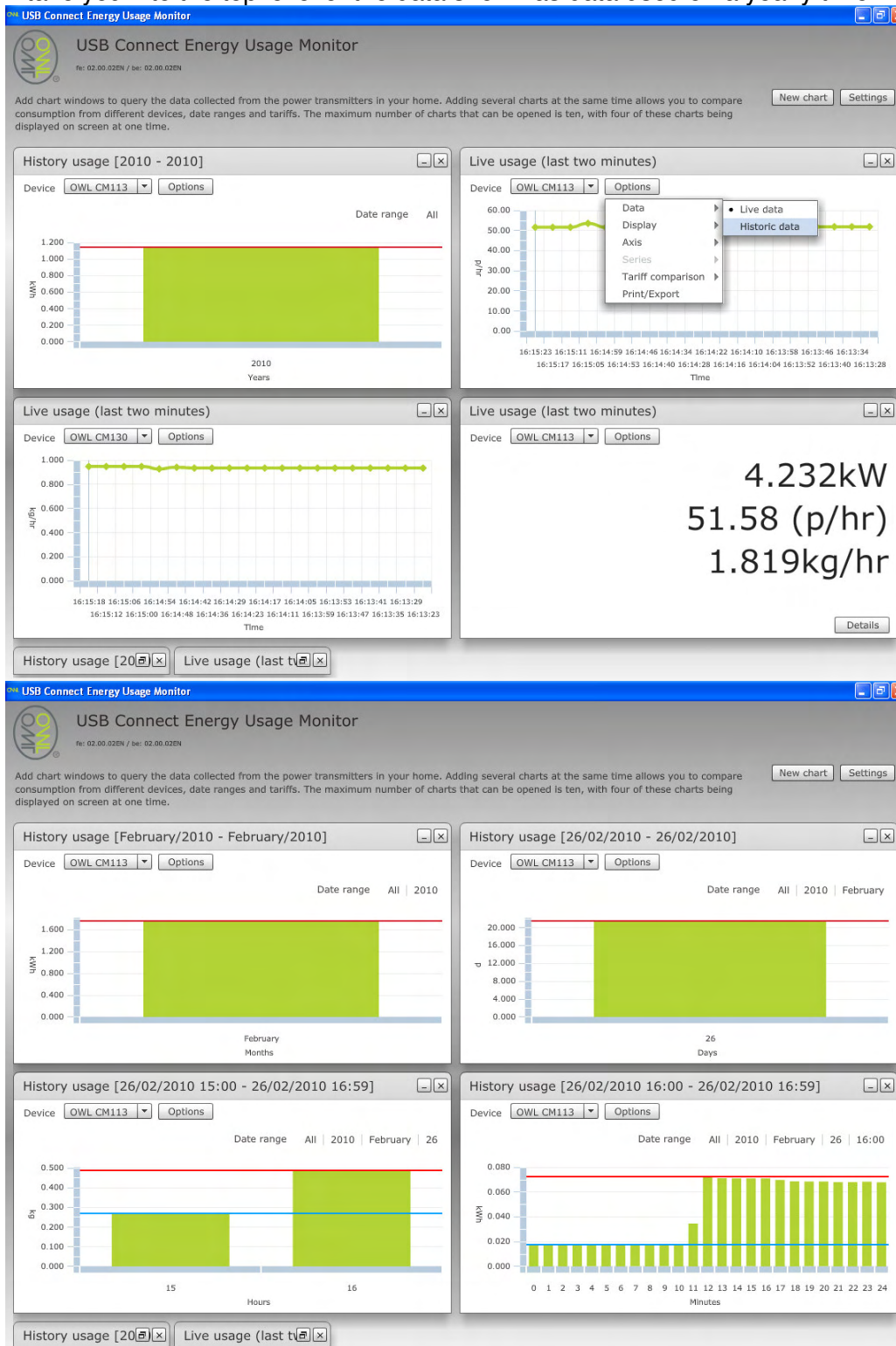
- GHG Chart → Shows the calculated CO2 emissions for generating the electricity you are currently using based upon the GHG Conversion Factor you have used within the settings page.



- Numeric → Shows the live data of the electricity in use in kW, as a cost, and shows CO2 emissions.

3.3.3 Historical Data Charts

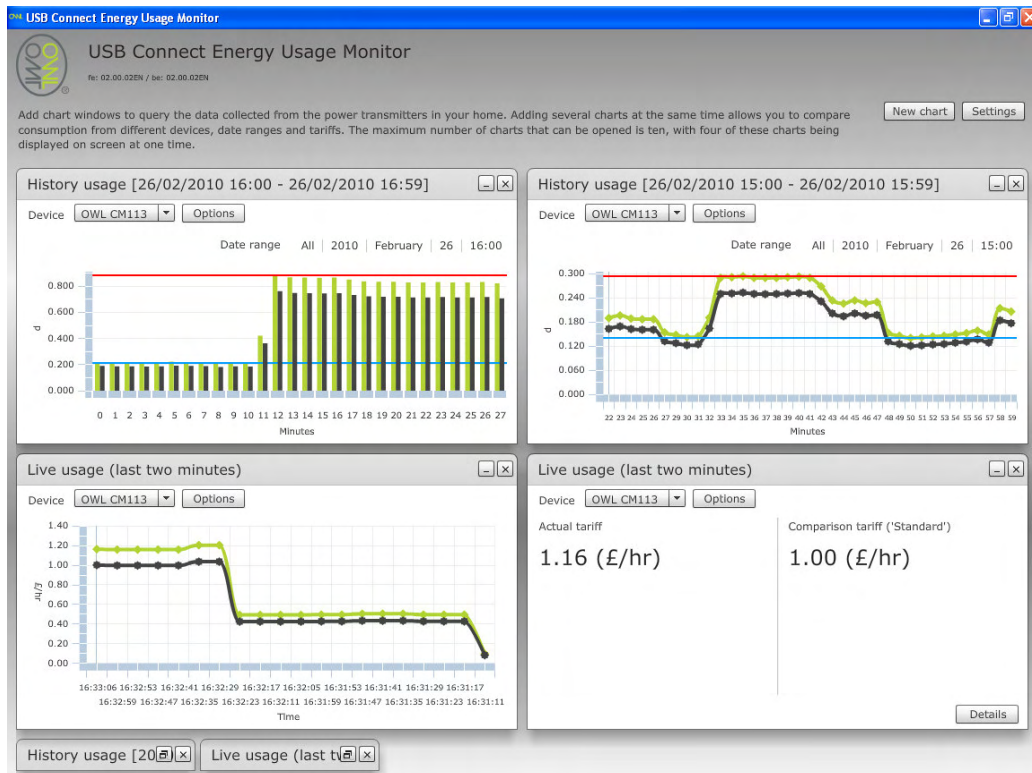
This will take you into the top level of the data shown as data used on a yearly timeline.



Drill down into the data by placing the cursor over the data bar you want to look at in more detail, select that the data bar by clicking your mouse key to then see the data on a monthly basis. To view on a daily, hourly and per minute repeat steps above.

3.3.4 Tariff Comparison

Comparing tariff plans using Live data or Historical data against other entered tariff plans.



4.0 EXPORTING DATA

Exported data is saved to a default folder "C:\Documents and Settings\All Users\WINDOWS\Application Data\2SE" and the filename is generated from device name and date/time saved.

A shortcut to this folder can be found Start>Programs>OWL USB Connect 2.

After exporting a file the OWL USB Connect 2 user interface will be minimised and the OWL Data folder opened on the screen.

The exported data is downloaded in columns under the following headings:-

Sensor	Sensor identification associated with exported data.
Time	Timestamp of when data was recorded.
GHG Factor	GHG Factor applied to recorded data
Tariff Cost	Tariff Rate applied to recorded data.
Amps_Raw_Data	Raw data value relating to Amps measured by the sensor during that time period
Amps_Raw_Data_Min	Minimum raw data value relating to Amps measured by the sensor during that time period (ie Minimum value during that Day, Hour, Minute)
Amps_Raw_Data_Max	Maximum raw data value of Amps measured by the sensor during that time base (ie Minimum value during that Day, Hour, Minute)
kW_Raw_Data	Raw data value of kW calculated using Amps_Raw_Data and the voltage applied in the settings window when data was recorded.
kW_Raw_Data_Min	Minimum raw data value of kW calculated using Amps_Raw_Data_Min and the voltage applied in the settings window when data was recorded.
kW_Raw_Data_Max	Maximum raw data value of kW calculated using Amps_Raw_Data_Max and the voltage applied in the settings window when data was recorded.
Cost_Raw_Data	Raw data value of cost of electricity using applied tariff during the period between this and previous time stamp.
Cost_Raw_Data_Min	Minimum raw data value of cost of electricity using applied tariff during the period between this and previous time stamp.
Cost_Raw_Data_Max	Maximum raw data value of cost of electricity using applied tariff during the period between this and previous time stamp.
GHG_Raw_Data	Raw data value of calculated weight of Carbon Dioxide emissions using applied conversion factor during the period between this and previous time stamp.
GHG_Raw_Data_Min	Raw data value of calculated weight of Carbon Dioxide emissions using applied conversion factor during the period between this and previous time stamp.
GHG_Raw_Data_Max	Raw data value of calculated weight of Carbon Dioxide emissions using applied conversion factor during the period between this and previous time stamp.

4.1 HOW TO CONVERT EXPORTED RAW DATA?

Take the raw data and using the calculations below, convert the Current, Energy, Cost & GHG data columns.

- Current (Amps) → Amps Value ÷ 1
 - ie: 0.19 ÷ 1 = 0.19Amps
- Energy (kW) → kW value ÷ 1,000
 - ie: 4.4 ÷ 1,000 = 0.0044kW (or 4.4W)
- Cost (pence or cents) → Cost value ÷ 100,000
 - ie: 520000 ÷ 100,000, = 5.2pence
- GHG (kg) → GHG value ÷ 100,000
 - ie: 7100 ÷ 100,000 = 0.071kg (or 71g)

4.2 EXPORTING LIVE CHART DATA

Using the export function when viewing live data will download the current data as shown in the 2 minute live usage chart.

Device	Time	GHG_Factor	Tariff_Cost	Amps_Raw_Data	Amps_Raw_Data_Min	Amps_Raw_Data_Max	kW_Raw_Data	kW_Raw_Data_Min	kW_Raw_Data_Max	Cost_Raw_Data	Cost_Raw_Data_Min	Cost_Raw_Data_Max	GHG_Raw_Data	GHG_Raw_Data_Min
OWL CM113	08:48:04	0.43	12.19	3.1	2.8	28	713	644	6440	869147	785036	7850360	30659	27692
OWL CM113	08:47:58	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:52	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:46	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:40	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:34	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:28	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:22	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:16	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:10	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:47:04	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:46:58	0.43	12.19	3.2	2.8	28	736	644	6440	897184	785036	7850360	31648	27692
OWL CM113	08:46:52	0.43	12.19	3.2	2.8	28	736	644	6440	897184	785036	7850360	31648	27692
OWL CM113	08:46:46	0.43	12.19	3.2	2.8	28	736	644	6440	897184	785036	7850360	31648	27692
OWL CM113	08:46:40	0.43	12.19	3.2	2.8	28	736	644	6440	897184	785036	7850360	31648	27692
OWL CM113	08:46:34	0.43	12.19	3.2	2.8	28	736	644	6440	897184	785036	7850360	31648	27692
OWL CM113	08:46:28	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:46:22	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:46:16	0.43	12.19	2.9	2.8	28	667	644	6440	813073	785036	7850360	28681	27692
OWL CM113	08:46:10	0.43	12.19	3.2	2.8	28	736	644	6440	897184	785036	7850360	31648	27692

Converted data shown below:-

Device	Time	GHG_Factor	Tariff_Cost	Amps_Conv_Data (A)	Amps_Conv_Data_Min (A)	Amps_Conv_Data_Max (A)	kW_Conv_Data (kW)	kW_Conv_Data_Min (kW)	kW_Conv_Data_Max (kW)	Cost_Conv_Data (p/c)	Cost_Conv_Data_Min (p/c)	Cost_Conv_Data_Max (p/c)	GHG_Conv_Data (kg)	GHG_Conv_Data_Min (kg)
OWL CM113	08:48:04	0.43	12.19	3.1	2.8	28	0.00713	0.00644	0.0644	8.69147	7.85036	78.5036	0.30659	0.27692
OWL CM113	08:47:58	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:52	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:46	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:40	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:34	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:28	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:22	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:16	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:10	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:47:04	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:46:58	0.43	12.19	3.2	2.8	28	0.00736	0.00644	0.0644	8.97184	7.85036	78.5036	0.31648	0.27692
OWL CM113	08:46:52	0.43	12.19	3.2	2.8	28	0.00736	0.00644	0.0644	8.97184	7.85036	78.5036	0.31648	0.27692
OWL CM113	08:46:46	0.43	12.19	3.2	2.8	28	0.00736	0.00644	0.0644	8.97184	7.85036	78.5036	0.31648	0.27692
OWL CM113	08:46:40	0.43	12.19	3.2	2.8	28	0.00736	0.00644	0.0644	8.97184	7.85036	78.5036	0.31648	0.27692
OWL CM113	08:46:34	0.43	12.19	3.2	2.8	28	0.00736	0.00644	0.0644	8.97184	7.85036	78.5036	0.31648	0.27692
OWL CM113	08:46:28	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:46:22	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:46:16	0.43	12.19	2.9	2.8	28	0.00667	0.00644	0.0644	8.13073	7.85036	78.5036	0.28681	0.27692
OWL CM113	08:46:10	0.43	12.19	3.2	2.8	28	0.00736	0.00644	0.0644	8.97184	7.85036	78.5036	0.31648	0.27692

4.3 EXPORTING HISTORICAL CHART DATA

Using the export function when viewing collected data will download the data depending upon option selected:-

- Data from current chart being displayed.
 - Viewing one hours data when exported will give that hours data on a per minute basis
 - Viewing one days data when exported will give that days data on a per minute basis
 - Viewing one months data when exported will give that months data on a per minute basis
 - Viewing one years data when exported will give that years data on a per minute basis
 - Viewing all data when exported will give all data on a per minute basis

- Data collected between 2 dates for sensor in current chart.
 - When exporting between 2 dates when one hours chart is being viewed only that hours data for the between those dates are exported on a per minute basis
 - When exporting between 2 dates when viewing all other charts all data between those dates is exported on a per minute basis.

- All data collected for sensor.
 - Exports all data for that sensor on a per minute basis.

5.0 CHART PRINTING

A simple version of the charts can be printed by selecting the Print option in the Export/Print menu.

