

ENERGY MANAGER – HTML 5

User Manual

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CORPORATION

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EMPOWERING INNOVATION



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INTRODUCTION

Since 2002, Utilismart has been the industry leader in providing data services to customers throughout Ontario. Our services are built on industry expertise and an in-depth understanding of the needs of the customer. Our hosted solutions offer customers an economical, efficient service that has built-in reporting and analysis tools.

Our knowledge in this area allows for seamless integration into CIS, Financial, and other customer systems requiring metering information and data.

The following manual that is intended to assist Utilismart Corporation's customers in understanding our role and to provide detail on the functionality of the product.

SERVICE DESCRIPTION

The Utilismart ENERGY MANAGER portal provides the information required by companies in one easy to use and accessible web application.

- We provide an independent read of the customer's electrical meters.
We process the meter data to the website on a daily basis and post the data in easy to view graphs and charts.

The system collects data; verifies and processes the data into information; presents information for viewing; and formats the information for download to customers via the web application.

Our system is capable of performing several aggregations of meter data.

The Energy Manager is one piece of the overall system that utilities must operate in order to perform the daily tasks required for the Ontario market.

Each company is slightly different in the specific mechanisms they use in their day-to-day operations, however there are commonalities.

- Your have interval meters that record the power consumed by the facility on a 5 or 15 minute basis.
- This 5 or 15 minute data is downloaded on a daily basis using MV90.
- The data then processes through the Utilismart system.
- Data is then available on the web.

CUSTOMER ACCESS VIA THE WEB

Access to the Utilismart Energy Manager system and your data is through a secure web page at:

<https://ciem.utilismart.com/utilismartcorp>

The web page is available 7 days a week, 24 hours a day. We do reserve Wednesday evening (6:00 pm to midnight) and Saturday evenings (5:00 pm to midnight) for system maintenance when required.

Utilismart also maintains an overall change management procedure for its support infrastructure and supporting services. The change management procedures define the communication, risk assessment, maintenance and deployment practices that are employed during any maintenance window.

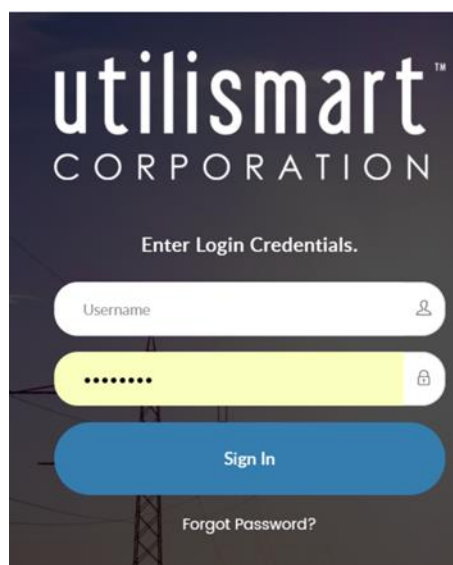
SUPPORT

Please contact our offices should you require assistance with any of the functionality described in this manual.

Our offices are open from 8 am – 5 pm daily and we can be reached by telephone at 519- 652-0689 or by email at helpdesk@utilismartcorp.com. Emails submitted to helpdesk automatically create a ticket for tracking and follow up. This is the best method to ask a question, request assistance or user access.

LOGIN SCREEN

The login screen provides secure access to the Utilismart web portal. When accessing the Energy Manager portal, you will need to enter your user name and password to access the site.



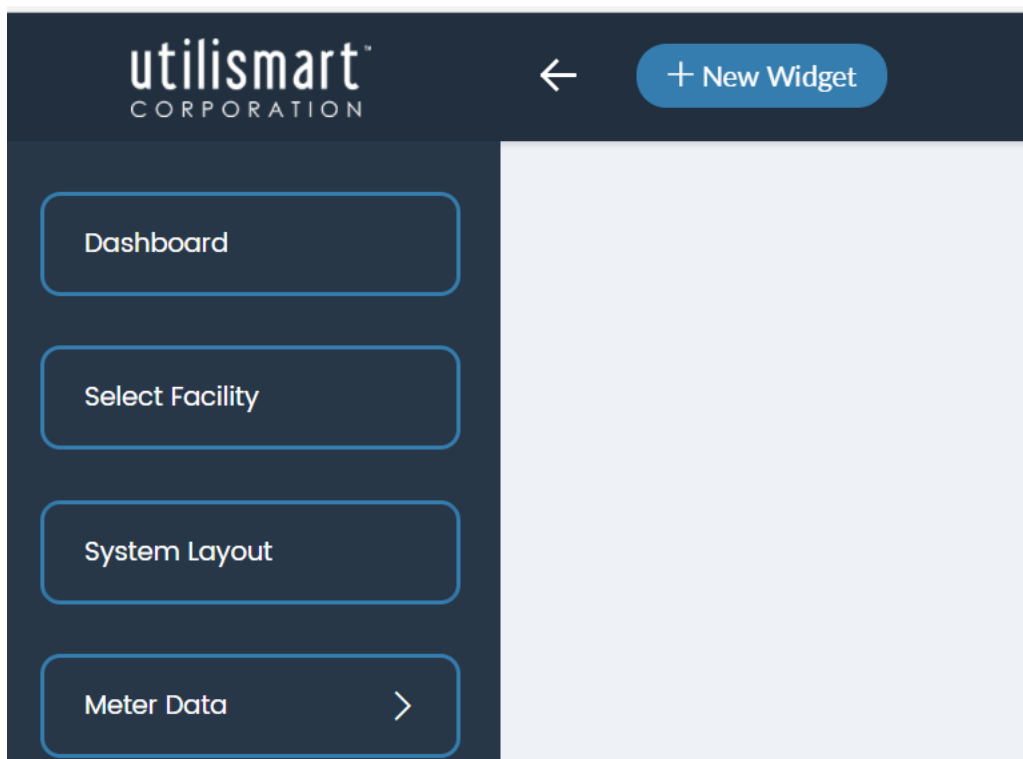
With the new HTML5 version of the site, you will have the opportunity to opt-in to two-factor authentication. This means that in addition to your password you will be required to enter a code that you can elect to receive by either text message or email. This code along with your password will be required at each login and the code will change (a new email or text will be received) at each password change.

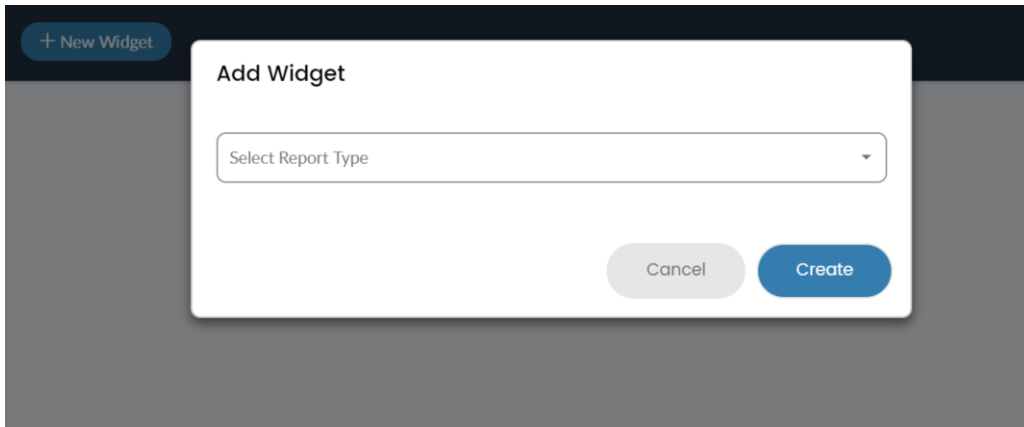
You can choose two-factor authentication by choosing “My Profile” in the top right corner of the dashboard and then selecting the type of two-factor authentication you prefer.

DASHBOARD AND WIDGETS

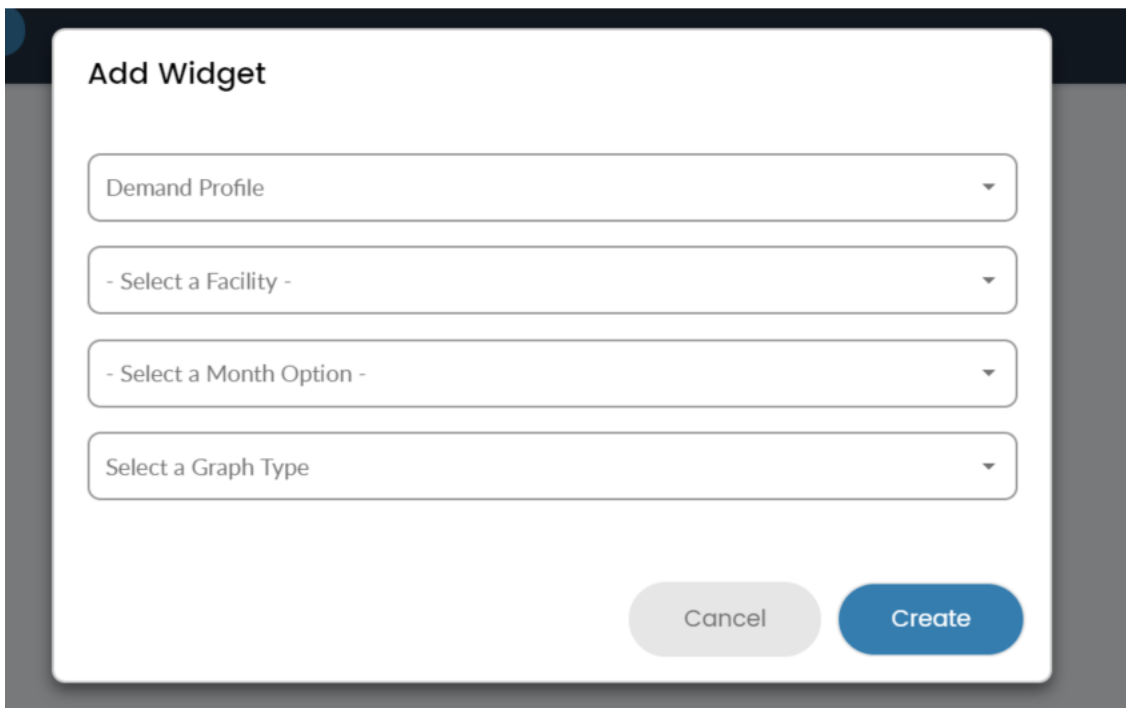
From the login screen, you will land on the Dashboard. All functionality can be accessed from this page. The menu bar is down the left-hand side of the page; the menu can be collapsed by clicking the left-facing arrow at the top of the screen.

At the top of the Dashboard is the Widget button. Use this button to create a new widget that will be saved so that every time you log in that tile will appear on your landing page. For example, if you always want to see the demand profile of a specific site, you can click the Widget button, which will open a tile that permits you to create a personalized widget.

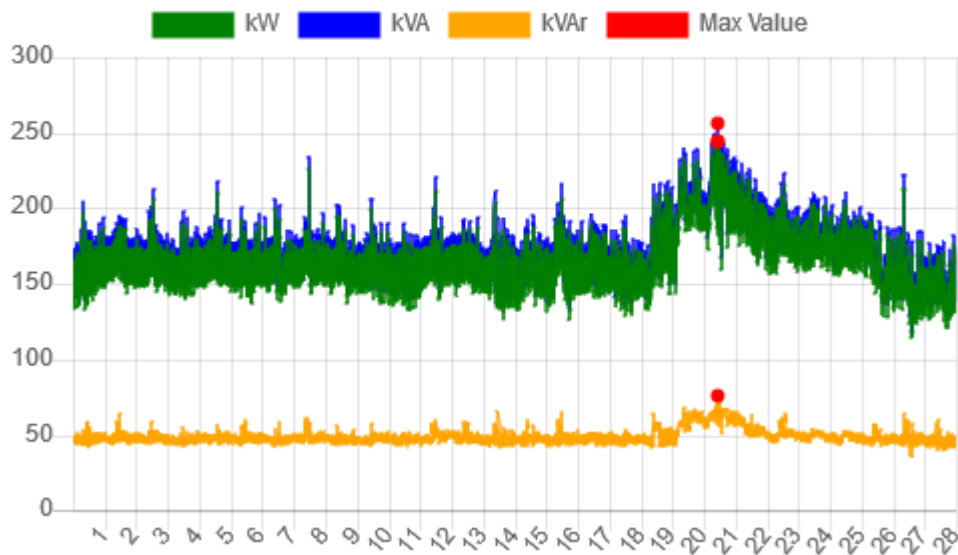




Once you select a report type, the additional required fields appear in drop down menus to enable you to finalize the selection. You must select the facility, the time period and the presentation type that you want to appear.



Once you have made those selections, the graph or report is created in one tile on your landing page. You can create numerous widgets to appear on your landing page at each login. Widgets are user specific and the dashboard button at the top of the menu bar will bring you back to this landing page and display your predefined widgets.



SELECT FACILITY

Select the "Select Facility" option in menu bar on the left-hand side of the dashboard page to access a list of all facilities available for viewing and reporting. From here you can select the facility you would like to work with in this session.

The Select Facility Screen offer an overview of the available data for all facilities and is expandable to display All meter by type, but is also sortable by type, account ID, meter ID, date etc. There is also a search function that can be used against any of the header categories.

Each of the facilities or metered points that the user has access to is listed on this screen, along with the meter number and account number for the point. The default view is paginated with 10 facilities per page. To expand the screen to display more facilities per page, use the drop down at the bottom of the page. There you can expand to show all available facilities on one extended page that you can scroll through. If the facility does not have an account number, N/A will be displayed in the Account ID field. Virtual facilities, such as the aggregated loads will have "VIRTUAL" in the Meter ID field.

The start and end dates that meter data is available for each of the points is listed beside the facility. The type of facility is also identified on this screen – generation, retail or wholesale.

The sort order can be changed using the navigation arrows located beside each column heading in ascending or descending order. For facilities whose data is 3 to 30 days behind, the facility is highlighted in yellow. Facilities whose data is more than 30 days behind are highlighted red.

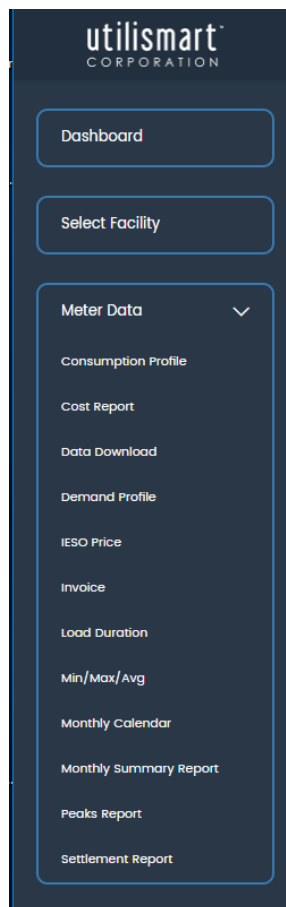
TIPS

The Facility Selection screen introduces the main navigation tool bar for the Utilismart application. Along the left-hand side of the screen are all of the reports that are available to view. Clicking on any of these buttons will present the user with the screen named on the button.

In order to access any of the reports, a facility must be selected by clicking it. Only one facility may be selected at a time. This will be the facility that the reports are presented for. Simply choose the facility by clicking anywhere on the display line for it and then it will change colour and you will be returned to the dashboard. From there you can select any of the applicable reports down the left-hand side menu bar.

METER DATA

The Meter Data Menu option opens to list the reports available under this selection.



CONSUMPTION PROFILE

The Consumption Profile report is available for all meter types. It provides a breakdown of energy (kWh) for on and off-peak periods.

The Consumption Profile data table displays on peak and off-peak kWh and kW demand in columns which can be viewed as totals for each day (in the monthly view) or totals for each hour of the day (in the daily view). You can toggle between a daily and monthly view with the buttons at the top of the screen and also move between a table and a graph view with those same buttons.

Date	On Peak kWh	On Peak kW Demand	Off Peak kWh	Off Peak kW Demand	Total kWh	Max kW Demand
2017-11-01	862.32	83.50	627.84	77.80	1,490.16	83.50
2017-11-02	797.52	80.60	589.68	80.60	1,387.20	80.60
2017-11-03	820.80	77.80	639.84	74.90	1,460.64	77.80
2017-11-04	0.00	0.00	1,393.68	80.60	1,393.68	80.60
2017-11-05	0.00	0.00	1,267.92	74.90	1,267.92	74.90
2017-11-06	847.92	83.50	612.24	74.90	1,460.16	83.50
2017-11-07	877.68	83.50	622.80	77.80	1,500.48	83.50
2017-11-08	855.36	83.50	648.48	77.80	1,503.84	83.50
2017-11-09	864.72	80.60	637.20	77.80	1,501.92	80.60
2017-11-10	944.16	86.40	766.56	83.50	1,710.72	86.40
2017-11-11	0.00	0.00	1,628.64	80.60	1,628.64	80.60
2017-11-12	0.00	0.00	1,464.48	86.40	1,464.48	86.40
2017-11-13	0.00	0.00	1,515.60	83.50	1,515.60	83.50
2017-11-14	866.88	86.40	624.48	77.80	1,491.36	86.40
2017-11-15	826.56	80.60	610.08	74.90	1,436.64	80.60
2017-11-16	870.96	80.60	626.88	80.60	1,497.84	80.60
2017-11-17	879.36	80.60	714.72	77.80	1,594.08	80.60
2017-11-18	0.00	0.00	1,421.28	77.80	1,421.28	77.80
2017-11-19	0.00	0.00	1,471.44	80.60	1,471.44	80.60
2017-11-20	881.28	77.80	731.04	77.80	1,612.32	77.80
2017-11-21	818.40	77.80	667.92	77.80	1,486.32	77.80
2017-11-22	863.52	77.80	664.80	77.80	1,528.32	77.80

Monthly Summary

On Peak kWh	17,935.44
Off Peak kWh	26,801.52
Total kWh	44,736.96
On Peak Max Demand	86.40 kW
Date	2017/11/10
Time	08:55
Off Peak Max Demand	86.40 kW
Date	2017/11/12
Time	12:20
Max Demand	86.40 kW
Date	2017/11/10
Time	08:55
Max Daily Energy	1,710.72 kWh
Min Daily Energy	1,267.92 kWh
Avg Daily Energy	1,491.23 kWh
On Peak Load Factor	82.38 %
Off Peak Load Factor	66.28 %
Overall Load Factor	71.92 %
On Peak Hours	252.0
Off Peak Hours	468.0

Note : All data within this report is without losses.

When viewing the table presentation, the right-hand side of the Consumption Profile screen is an energy summary for the period that includes the total for on peak and off-peak energy, the demand peak for both the on and off-peak periods, the average energy in each period, the load factor for each period and the maximum and average kWh for the period.

By selecting the graph option, you see a stacked bar graph delineating on peak and off-peak totals for the day or month. The monthly view has one bar per day and the daily view has one bar per hour.

The monthly graphical view provides a valuable and quick overview of the demand and energy load shapes for the entire month. Differences in load shapes between working days and non-working days, between Mondays and Fridays, between the first of the month and the end of the month, etc. can be quickly recognized and assessed from one graph.

The graph can be used to determine specifically when energy use increased if monthly kWh start to rise dramatically. Identifying the date that a change or problem started helps to focus investigation and narrows root cause analysis.



COST REPORT

The Cost Report provides a summary of your electricity costs for the month to date for each individual facility. It is divided into columns to display on peak and off-peak kWh totals and cost totals. There is a summary to the right side of the screen that provides details on the energy, demand and cost to date for on peak and off-peak energy. The total cost for the facility to date is also displayed only with the calculated demand rate – if it is applicable to the rate for the facility.

The on peak period for all facilities is the period from 7 AM – 7 PM, Monday – Friday, excluding holidays. This is equivalent to the period that is applicable to the network service charge.

TIPS

The Cost Report can easily assist in validating your Network and Connection charges that the IESO bills your utility. The report can validate the day of your peak and the demand value that the IESO is billing the meter point.

DATA DOWNLOAD

The Data Download report provides date range download of demand values for any selected meter point. The report is optimized to retrieve two months of demand data at once.

Download Format

Demand Profile

Available Data

2016-05-01 - 2017-11-21

Date Range

11/01/2017 - 11/21/2017

*Please select a data range of maximum 2 months for optimal Data Download performance.

Create File

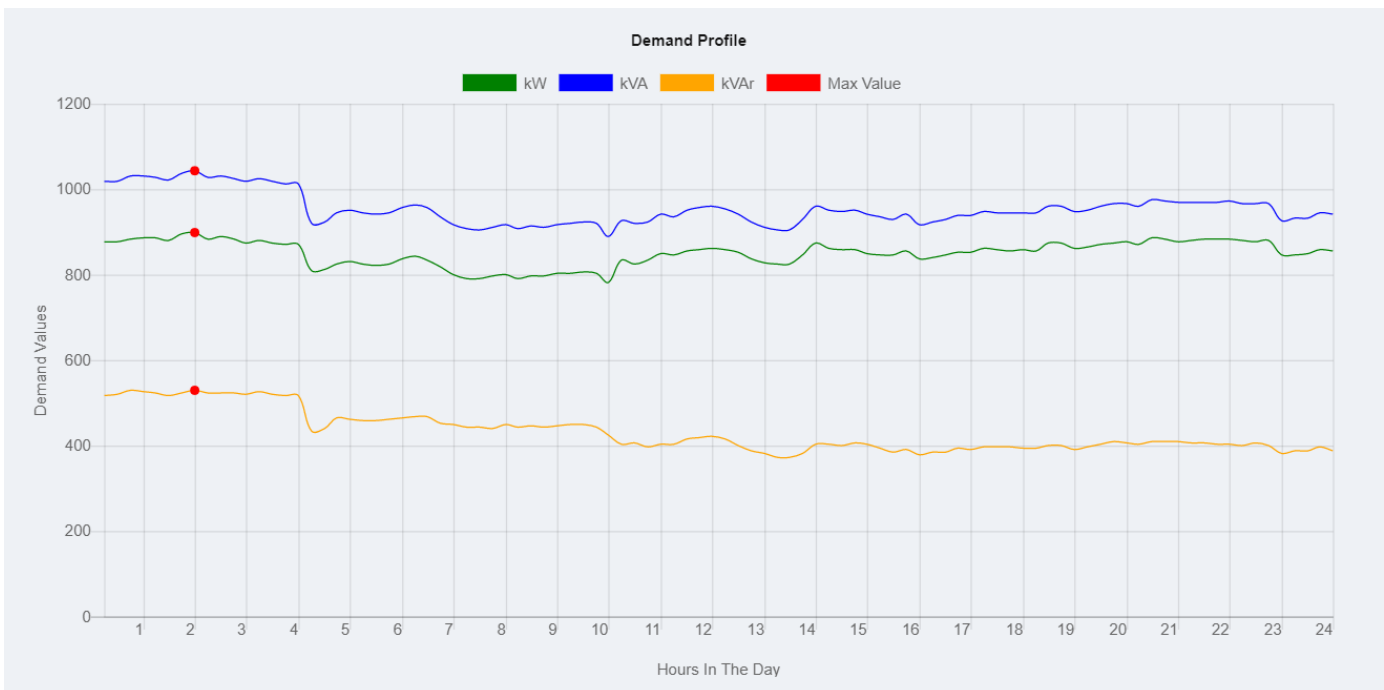
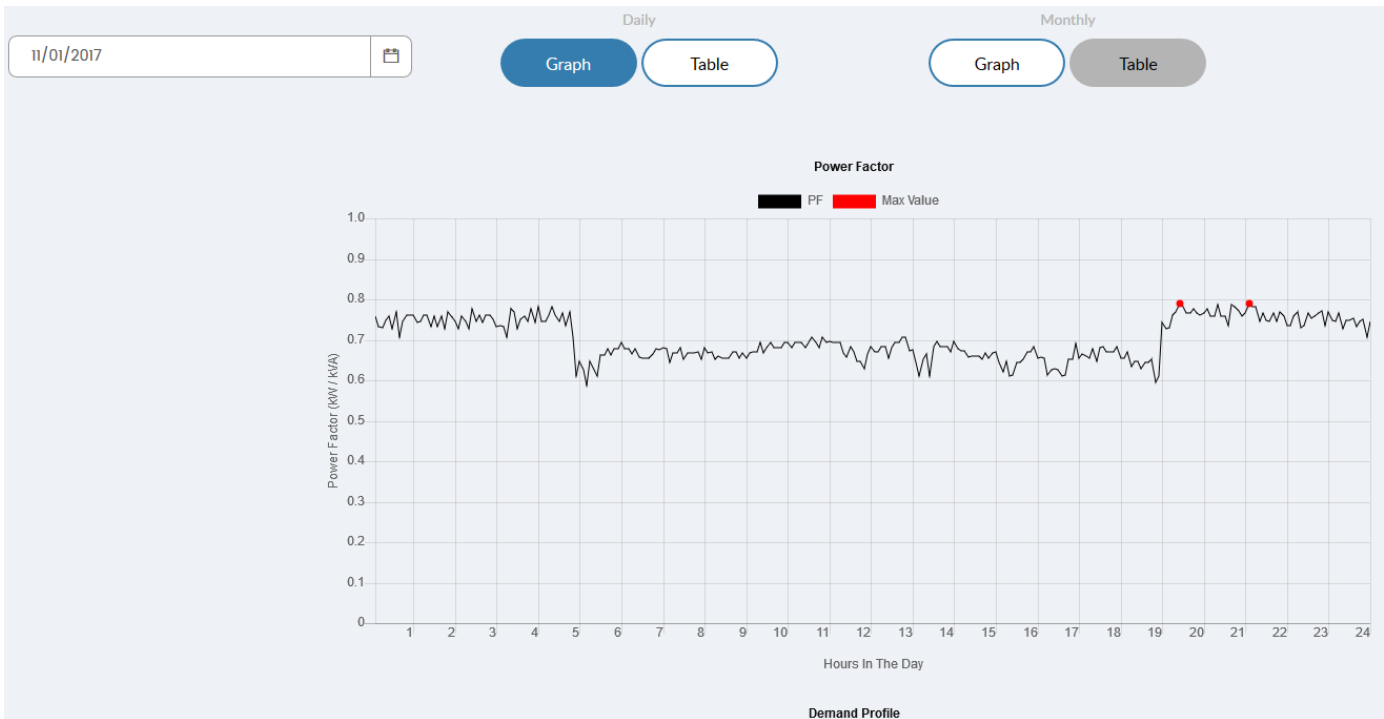
File includes following metered and calculated values per interval:

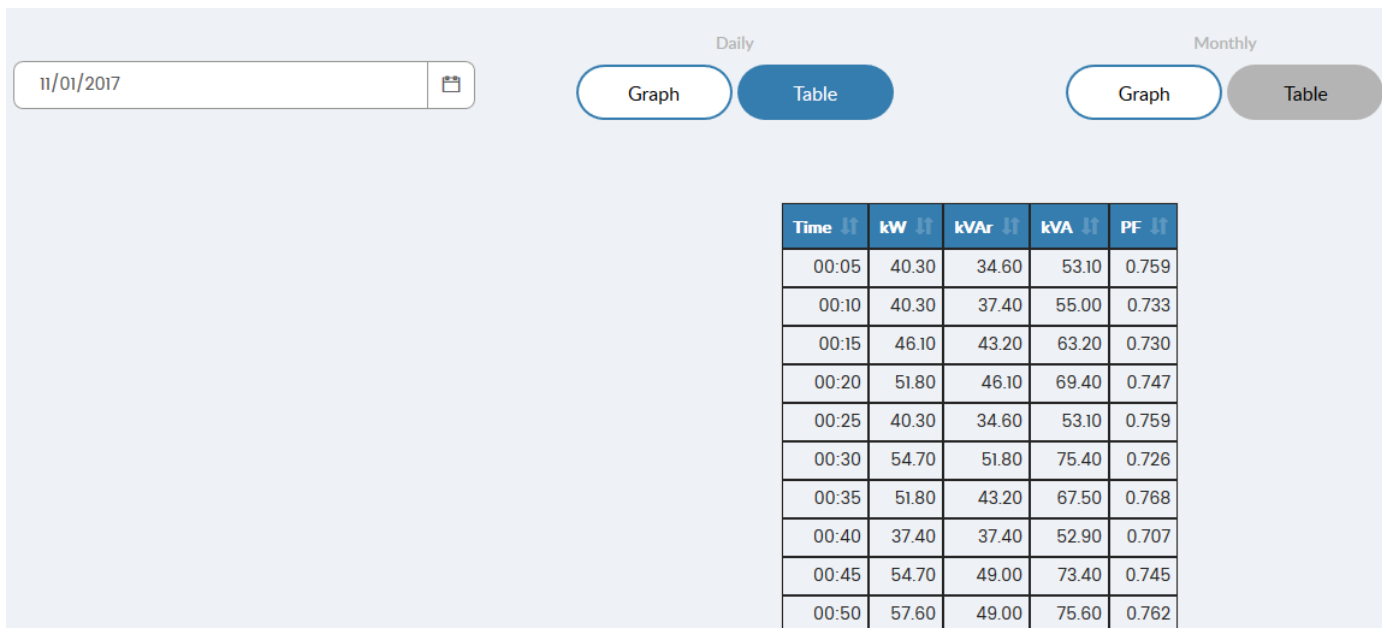
- kW
- kVAr
- kVA
- PF (Power Factor)

DEMAND PROFILE

This report consists of a 24-hour power factor and separate demand graph and data table for each day of the period. i.e., 30 individual graphs and data tables for a 30-day month. Each day combined demand and power factor graphs are provided for kVA billed customers.

These graphs and data tables provide you with a daily load profile in hourly increments.





A monthly Demand Profile is also available by clicking on the Monthly button at the top of the screen.

The monthly view produces a graph of the daily demands for the entire monthly period to date. If your interval meter records kVA and/or kVAR in addition to kW, you will see a Power Factor graph above the monthly demand graph. This is a graph of the daily Power Factor for the entire period.

This graph provides a high-level overview of the load shape for the entire month. Differences in load shape between working days and non-working days, between Mondays and Fridays, between first of the month and end of the month, etc. can be quickly reviewed all from one graph. Also, an immediate comparison of peak day demand to other working day peak demands can be made.

The table view highlights the peak interval and the lowest power factor.

FAQ

What is the change in my power factor when X machine is on?

By tracking when X machine is on, you can compare these times to the daily Demand Profile for the same time and see how the Power Factor was affected.

How much do my switched capacitor banks improve my Power Factor?

By tracking when the capacitor banks are switched on, you can compare these times to the Daily Demand Profile for the same time and see how the power factor was improved.

Watch for Power Factor that suddenly goes low and stays there. This can be an indication that one of your capacitor banks has failed.

Is my peak day load shape an anomaly or do I have roughly the same load shape each working day?

It is important to determine this because you don't want to make operational changes based on a load shape that would never have been repeated.

You can compare the peak day load shape with load shapes for other working days and evaluate the consistency of the load shape. You can choose Monthly from the bottom navigation tool bar and see if the peak day's load shape looks consistent with the rest of the working days in the month.

How does my non-operational load shape (holidays, weekends) compare with my working days?

Using the monthly demand graph, simply compare some working days with non-working days.

I know that I had a fault on my own distribution system at around 2:15 PM on the 12th. How did that affect my demand?

Choose the Daily button on the bottom navigation tool bar. Use the month/day pull down to choose the day that the fault occurred, the 12th, then click GO. You can then view the graph to see how your demand was affected around the time of the fault.

We were doing electrical work on the 19th and I know that only the lighting was on from 9:00 am to 11:30 am. Can I use this to determine my lighting load?

Using the Daily button and the month/date pull down on the bottom navigation tool bar, choose the day that the work occurred, the 19th, and then click GO. Look at the demand for the time that only the lighting was on and the demand showing is your lighting load. Choose a time about ½ hour after your electrical work started so that the entire load has registered on the meter. Allow 15 minutes for 90% of the load to show on the meter and ½ hour for 100% of the load.

How can I determine the size of each of my process loads?

On a non-working day at your facility, turn everything possible off. Then, run each of your processes one at a time, tracking when you start each one. Run each process for ½ hour. Turn it off and start the next one. Using this information, compare to the daily Demand Profile for the day of the test to the times that each process was run. The demand showing 15 minutes after the process was started is 90% of the load's size.

I noticed that my Power Factor at peak was much worse than at other times during my peak day. Does my Power Factor always dip when my demand peaks?

Power Factor does not necessarily dip whenever a peak demand is set. It is dependent on the types of loads that make up your peak. In order to determine if your Power Factor always dips, you need to look at the Power Factor graph for a number of working days. You can see the Power Factor for a day on the daily Demand Profile or for the month on the monthly demand graph. This will only be shown if your meter records kVA and/or kVAR values.

I noticed that I peak at 10:00 am, but there is a big dip in demand at 3:00 PM. Could I trim my demand by moving processes from 10:00 am to 3:00 PM?

First you need to determine if this happens regularly or if it was an anomaly. You can do this by looking at several working days' Demand Profiles. View the monthly Demand Profile and look at several working days. If you see that there is always a dip in the afternoon and that the peak is consistently in the morning then you may want to pursue changing the timing of the processes. You need to know the size of the loads that you are switching, as you do not want to just change the time of your peak from 10:00 am to 3:00 PM.

What was I doing the day I set my demand peak?

Using the daily Demand Profile for the peak day, you can see the load shape for the day your peak demand was set. Was the demand peak simply a slight increase over the demand on the rest of the day or was there a sudden, short demand "spike". If the demand "spike" is occurring in the first ½ hour of the workday or immediately following lunch then it could be due to all equipment be started at the same time. You may be able to avoid the "spike" by determining which process is causing it and reducing other processes that are running at the same time as the intensive process.

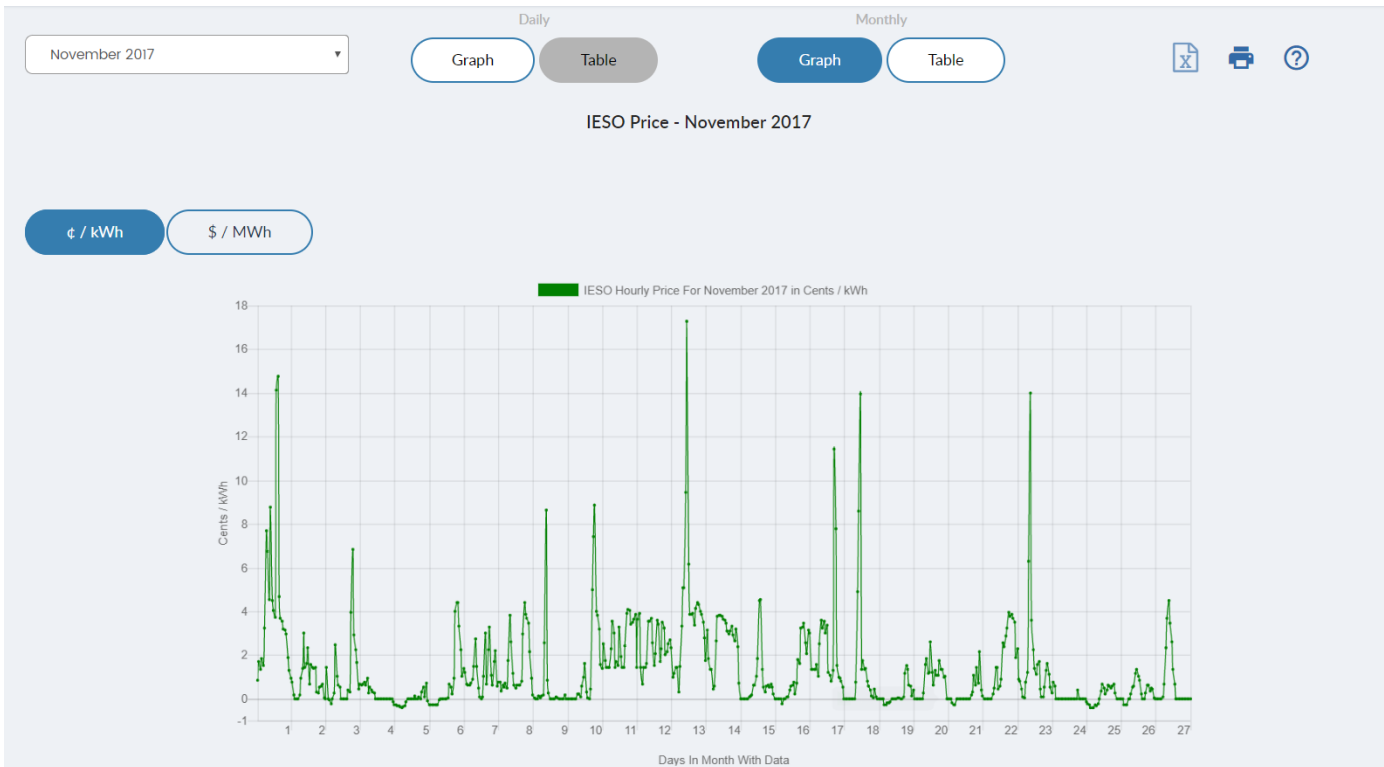
You can also do additional analysis on the data that is contained in the data table by downloading it to an excel spreadsheet and manipulating it further. To download, you click on the Download button in the top right corner of the report screen and a .csv will download automatically and you can open this file in excel to perform any analysis desired. Additionally, you have the option to print the graph or table view directly from this screen by selecting the printer icon in the top right of the report screen.

IESO PRICE

The HOEP (Hourly Ontario Energy Price) as collected on the Trading Day is posted to this report and is displayed in both graph and data table format by day and by month to date. These views are accessible by selecting the buttons across the top of the screen. The IESO Price Report allows the user to download the data table and use it for monthly and annual comparisons.

This is the price that is posted to the Trading Day Report in the 4 Business Days column.

It is available in a monthly graph or table and a daily table.



November 2017

▼

Daily

Monthly

Graph

Table

Graph

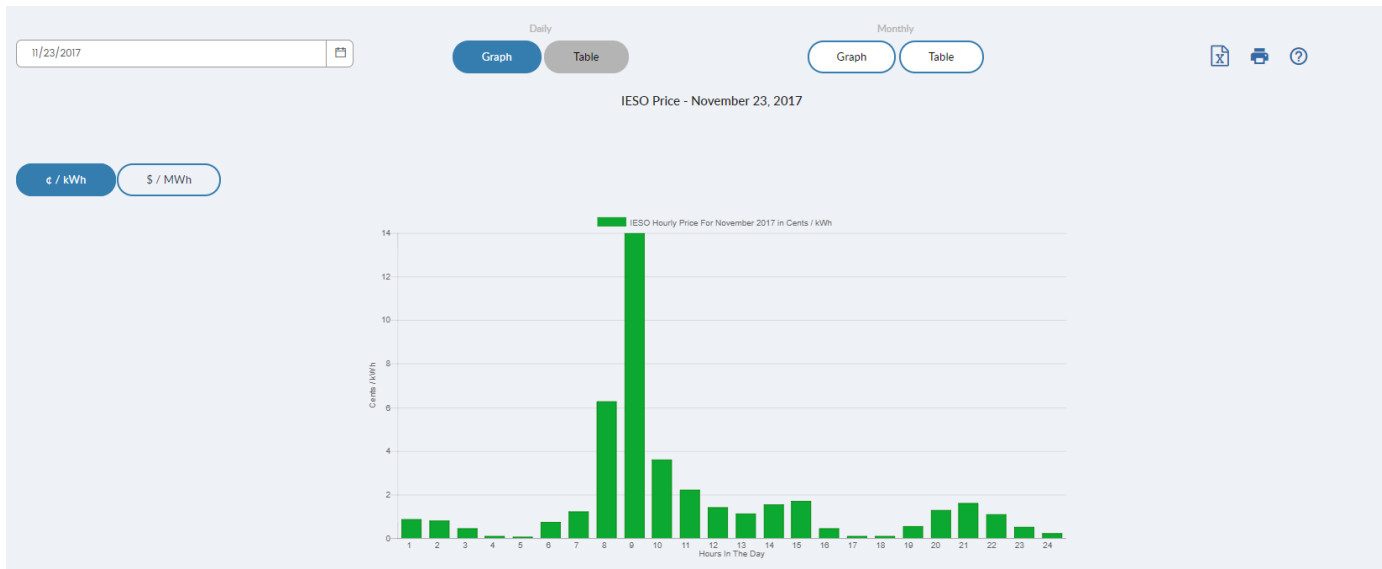
Table

IESO Price - November 2017

¢ / kWh

\$ / MWh

Day/Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2017-11-01	0.853	1.698	1.337	1.855	1.522	3.228	7.674	6.753	4.537	8.752	4.471	4.049	3.749	14.125	14.769	4.687	3.699	3.568	3.177	3.132	2.950	1.877	1.317	0.936
2017-11-02	0.748	0.170	0.000	0.000	0.000	0.150	0.921	1.367	2.991	1.435	1.622	2.326	0.678	1.549	1.436	1.367	1.435	0.292	0.269	0.520	0.573	0.886	0.050	0.000
2017-11-03	1.435	0.000	(0.055)	(0.225)	0.000	0.255	2.445	1.022	0.610	0.536	0.000	0.000	0.000	0.000	0.000	0.395	0.288	3.942	6.823	2.907	2.221	1.660	0.460	0.654
2017-11-04	0.610	0.676	0.748	0.606	0.952	0.240	0.510	0.403	0.314	0.263	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	(0.126)	(0.300)	
2017-11-05	(0.300)	(0.308)	(0.317)	(0.367)	(0.400)	(0.375)	(0.308)	(0.152)	0.000	0.000	0.000	0.000	0.000	0.136	0.000	0.000	0.080	0.000	0.323	0.535	0.081	0.692	(0.078)	(0.300)
2017-11-06	(0.300)	(0.300)	(0.300)	(0.300)	(0.300)	(0.300)	(0.051)	0.000	0.000	0.000	0.000	0.000	0.043	0.665	0.536	0.205	0.934	4.002	4.386	4.396	3.330	2.256	1.013	1.405
2017-11-07	1.214	0.667	0.604	0.599	0.725	0.908	1.495	2.745	1.477	0.475	0.091	0.000	0.084	1.041	2.998	0.668	2.259	3.255	1.092	0.604	1.717	2.185	0.570	0.760
2017-11-08	0.778	0.364	0.604	0.951	0.725	0.483	1.729	3.827	2.584	1.150	0.612	0.478	0.602	0.605	0.601	0.797	2.964	4.388	3.860	3.681	3.475	2.161	0.914	0.151
2017-11-09	0.049	0.000	0.000	0.125	0.049	0.133	0.149	2.579	8.640	0.850	0.263	0.000	0.000	0.000	0.000	0.084	0.043	0.000	0.000	0.000	0.000	0.187	0.000	0.000
2017-11-10	0.000	0.000	0.000	0.000	0.000	0.195	0.198	0.083	0.577	0.961	1.620	0.291	0.050	0.000	0.451	4.981	7.398	8.875	3.990	3.830	3.183	1.576	1.366	
2017-11-11	2.527	1.735	1.438	1.437	1.437	2.299	3.540	2.992	1.436	1.693	1.519	3.281	1.921	1.437	1.437	2.422	3.888	4.084	4.035	3.416	3.510	3.636	3.850	1.435
2017-11-12	3.615	3.903	1.437	0.657	1.435	1.435	1.599	3.550	3.549	3.676	2.535	1.518	2.075	3.610	3.391	1.701	2.295	3.521	3.221	1.997	2.163	2.491	2.678	2.349
2017-11-13	0.999	1.158	1.434	1.435	0.317	1.462	3.331	5.068	5.069	9.439	17.291	6.175	3.854	3.850	3.926	3.355	4.122	4.391	4.333	4.001	3.879	3.512	2.785	1.743
2017-11-14	3.134	1.857	1.336	1.338	0.443	0.580	2.629	3.784	3.839	3.827	3.794	3.656	3.595	3.444	3.085	2.943	3.094	3.329	2.906	2.645	3.166	2.379	0.727	0.000
2017-11-15	0.000	0.000	0.000	0.000	0.000	0.092	0.143	0.192	0.605	0.600	1.018	1.849	4.489	4.544	1.349	0.510	0.289	0.594	0.599	0.529	0.662	0.542	0.230	0.000
2017-11-16	0.000	0.000	0.000	0.004	(0.254)	0.001	(0.025)	0.098	0.080	0.375	0.575	0.609	0.767	0.233	0.730	1.792	1.601	3.213	3.264	3.438	2.562	2.070	3.150	2.985
2017-11-17	1.334	1.334	1.334	1.333	1.550	1.048	2.503	3.609	3.249	3.537	3.006	3.378	1.213	1.092	0.788	1.303	11.431	7.776	1.522	1.003	0.953	0.807	0.530	0.000
2017-11-18	0.000	0.000	0.000	0.000	0.000	0.000	0.747	4.906	8.583	13.926	1.336	1.734	1.334	1.404	0.816	0.596	0.393	0.139	0.049	0.441	0.090	0.000	0.000	0.000
2017-11-19	0.000	0.003	(0.029)	(0.300)	(0.300)	(0.204)	(0.202)	(0.152)	0.000	0.000	0.000	0.000	0.049	0.050	0.000	0.000	0.094	1.154	1.538	1.338	0.605	0.596	0.140	0.416
2017-11-20	0.000	0.000	0.000	0.000	0.000	0.000	0.252	1.562	1.832	1.151	1.212	2.593	1.214	0.604	1.275	1.093	1.085	1.726	1.336	1.335	0.962	1.020	0.000	0.000
2017-11-21	0.000	0.001	(0.178)	(0.300)	(0.300)	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.190	0.311	1.091	0.603	1.409	0.723	2.144	0.401	0.138
2017-11-22	0.000	0.000	0.000	0.000	0.000	0.000	0.211	0.503	1.438	1.413	0.459	0.571	0.883	2.553	2.395	2.850	3.231	3.933	3.777	3.854	3.665	3.486	1.872	2.272
2017-11-23	0.875	0.811	0.445	0.101	0.051	0.744	1.224	6.278	14.000	3.612	2.227	1.405	1.121	1.552	1.718	0.455	0.095	0.081	0.540	1.288	1.620	1.095	0.530	0.241



INVOICE

The invoice is available for all types of facilities: wholesale, retail and generation. Both the billing and service address for the facility are noted on the invoice. The account number as displayed in the facility selection screen and the CIS download is also noted on the invoice. Several different charge types can be displayed on the invoice.

The invoice is an accurate representation of the unbundled market energy bills and is based upon billing quantities using values that incorporate fixed or rolling demands, uplifted energy, and energy adjusted for primary metering. The invoice also applies any applicable rate rules, such as the highest kilowatt or 90% of the highest kVA, whichever is greater.

Wholesale facilities can show several charge types including an energy charge based on HOEP.

Retail interval facilities show the full breakdown of charges based on the energy and demand to date in the month. At the end of the month this is an accurate representation of the retail facilities total costs for energy. The invoice does not reflect any payments, adjustments or other charges that are not related to energy (i.e. water and sewer charges etc.). Generation facilities show the money earned based on the kWh and defined rate. The individual categories for charges can be modified based on the customer's requirements.

Item	Charge Type - Description	Billing Quantity	Rate	Charge (Credit)
Energy Based Charges				
1	Standard Supply Service	46,669.60 / kWh	\$0.0142042 / kWh	\$662.90
2	Wholesale Market Service + RRRP	46,669.60 / kWh	\$0.0039000 / kWh	\$182.01
3	Debt Retirement Service	44,736.96 / kWh	\$0.0070000 / kWh	\$313.16
Demand Based Charges				
4	Distribution Volumetric Rate	109.65 / kVA	\$3.2782000 / kVA	\$359.46
5	Low Voltage Service Rate	109.65 / kVA	\$0.6201000 / kVA	\$67.99
6	Rate Rider for Deposition of CBR Class B	109.65 / kVA	\$0.1120000 / kVA	\$12.28

The invoice is for a calendar month period. The invoice is printable but not downloadable.

PLEASE NOTE: This report is meant as a representation of the actual bill you receive from the Utility. If there are any discrepancies between the two, the invoice you receive from the Utility will supersede this report.

LOAD DURATION

The Load Duration Report provides information that shows an Energy Manager how much of the time his/her facility is running at different demand levels during a given month. The graph is based on the available demand values for the month to date.

The graph shows % of time on the x axis and load on the y axis. An Energy Manager can easily determine that 3% of the time his/her load is over a certain demand and that 25% of the time his/her load is at the second highest level of demand for the month. This graph provides information that allows the manager to understand which demand peaks to address first.



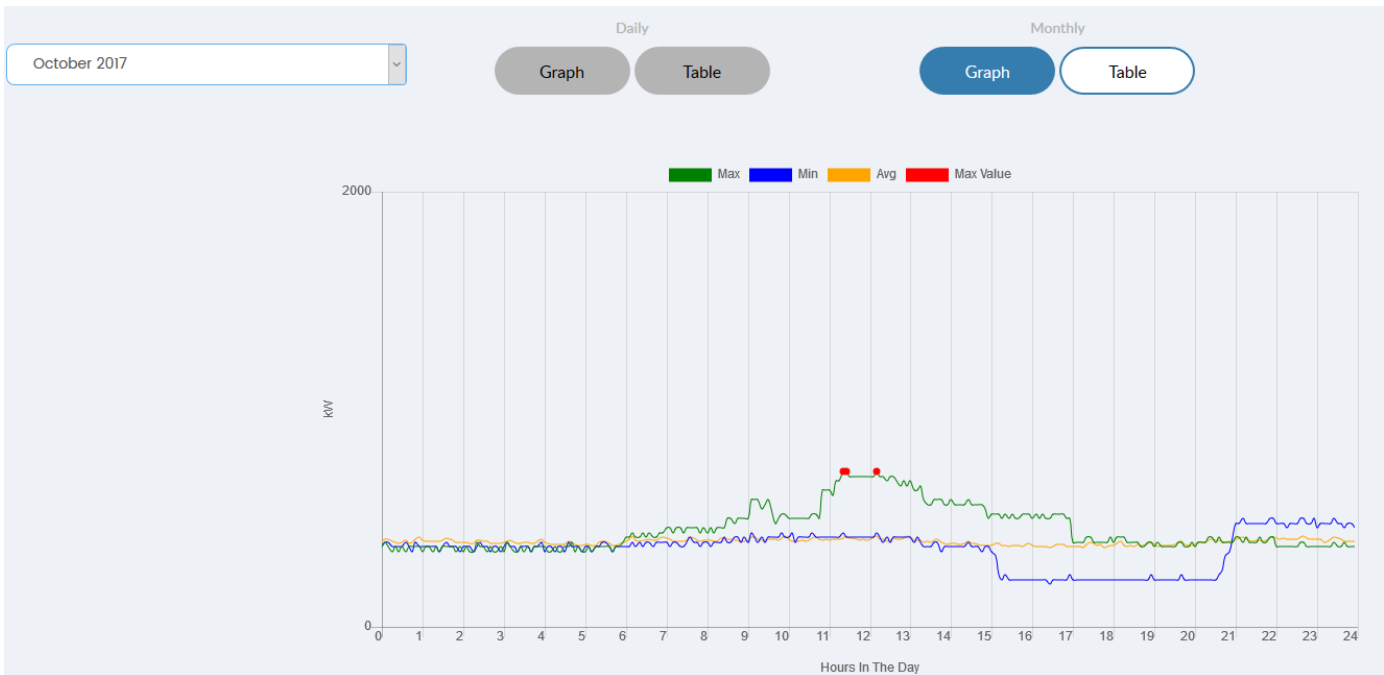
The graph also displays the monthly demand profile on top of the Load Duration Curve as a means to show which days the highest demands are occurring, so the Energy Manager can quickly narrow his search for fast results in identifying the course of action to reduce the demand usage.

A data table is not available for this report.

MIN/MAX AVERAGE

This is a graph and data table of three demand profiles.

- The first profile is for the day in the month to date that had the minimum demand.
- The second profile is the day in the month to date that had the maximum demand.
- The third profile is an average of the daily profiles in the month to date.



A customer who is trying to decide how much of their load they can lock into a fixed contract would use this information to compare the minimum profile days for several months to determine how much he could reasonably put in a fixed price contract. He would then look at the average profiles to determine where his second block of contract demand could be set and the maximum profiles would tell him how much he could have at risk on the spot market.

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Daily Monthly

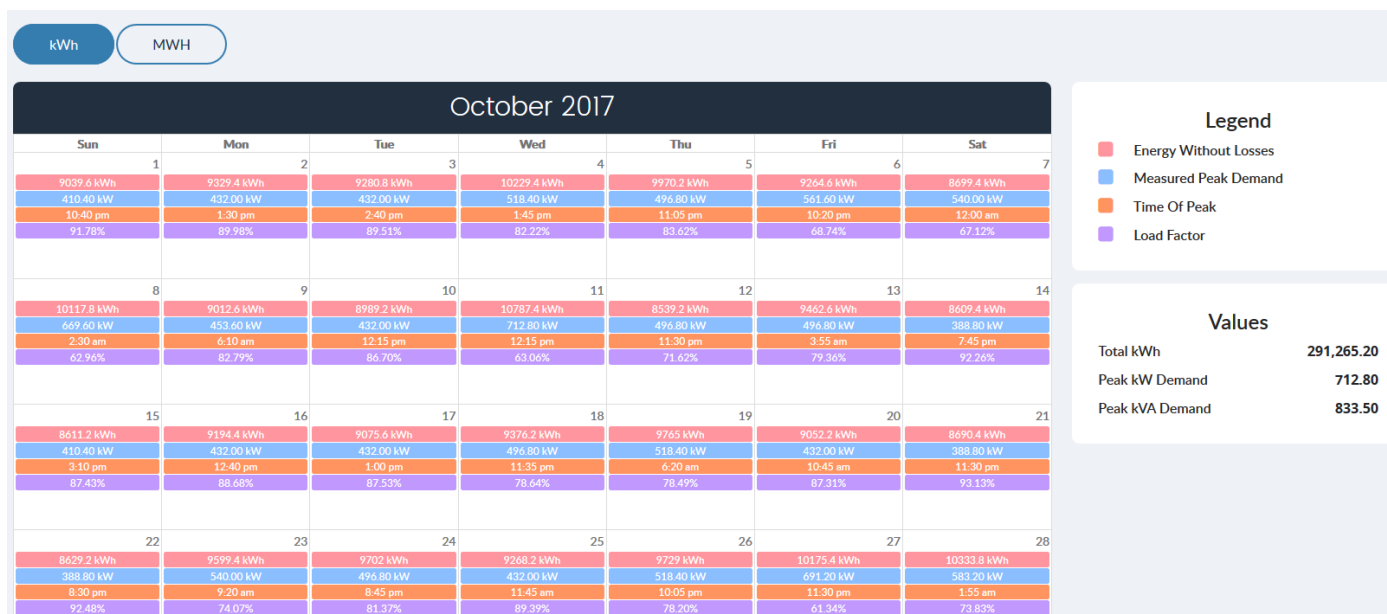
Graph Table Graph Table

Time	Max Day (11-Oct-17) kW	Min Day (12-Oct-17) kW	Avg Day kW
00:05	367.20	367.20	390.90
00:10	388.80	388.80	401.30
00:15	367.20	388.80	403.40
00:20	345.60	367.20	392.30
00:25	367.20	367.20	390.20
00:30	345.60	367.20	386.00
00:35	367.20	367.20	390.20

These three profiles can also provide a checkpoint for an energy manager who expects that his maximum day will be a certain day of the week when he knows he is operating at maximum output. Conversely, he can double-check kWh days when the operation is closed or at low output to ensure that processes are not running inadvertently.

MONTHLY CALENDAR

This report shows daily and monthly energy information for an individual facility for each day in the month.



Each day in the Monthly Calendar contains:

- Total energy consumption (kWh) - for that day only
- Demand in kW for that day
- Time of Peak - 24-hour clock time when peak occurred for that day
- Load Factor - for that day

Summaries at the bottom of the Calendar

- Total energy consumption for the month to date
- Peak Demand for the month to date in kW and kVA (if applicable)

How to Use this Page

Customers can use this report as a running quick summary of their operations. Rows on this report provide

a quick summary of each week, so you can compare weekdays to weekends. Columns provide a summary of each particular day type, so you can compare one Tuesday with the next Tuesday, for example.

FAQ

Does my facility operate differently depending on whether it is a weekday or weekend?

Looking at your Monthly Calendar for the facility in question can quickly assess this. By looking across the row you can compare weekdays to weekends and see if there are differences. By looking down the columns you can compare same days, that is compare all Mondays, or Saturdays with each other. For the day that the peak demand was set, try to determine what was different about this day as compared to the other days that are in the same column. For example, if your peak was set on a Monday - what made this Monday different than other Mondays in the month?

The Monthly Calendar says that my load factor is only 30 percent. Should I be concerned about this?

Load factor is a 24-hour calculation and most businesses are not 24-hour operations. You should look at the shape of the load using the monthly Demand Profile. If the load is fairly consistent (flat once the process day begins) then it is probably not an area for concern. If the load shape is "spiky" throughout the process day, you may want to look at trying to even out the processes.

Load factors as low as 24% can be ideal for a facility that is on/open for 8 hours a day, 5 days a week and completely off (0 demand) at all other times.

MONTHLY SUMMARY REPORT

This report begins with a list of all facilities registered to a market participant. The report can be configured here by selecting that facilities that the users wishes to have included in the report.

The report output is a table of the selected facilities showing the name of the facility and the maximum energy and demand for those sites for the month to date.

The Monthly Summary also provides benchmarking information for each facility like \$/sq. ft., \$/kWh, total kWh and total cost for the month to date.

This information is useful in spotting peak and poor performers amongst a group of facilities. It also provides a snapshot of all facilities for the month to date; this can be helpful when preparing reports for several sites on a regular basis. The demand and energy values include losses and are the billing determinants for the monthly invoice.

PEAKS REPORT

The Peaks Report lists the 10 highest demand peaks for the period. It shows the date and time each occurred, along with the associated kW, kVAR, kVA and Power Factor (PF) at each of the 10 peaks.

This information is useful in determining the area of greatest opportunity for demand and energy management.

The daily peak information in this table can help you to determine which days in the month have the highest demand and if there is a common time period among these days, you can begin to determine what is happening within your facility and operations that are driving these peaks.

- If a facility has one peak that is well above all of the others it is an opportunity to understand and reduce that peak and yield a significant amount of savings with a targeted effort.
- If a facility has a time period each day that they set their demand peaks, they can focus their efforts in streamlining operations and shifting discretionary operations to time periods with a lower demand, thus smoothing their demand curve, saving energy and dollars

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GraphTableGraphTable

kW Peaks	Date	Time	kW	kVAR	kVA	PF
1	2017-10-11	11:25	712.80	432.00	833.49	0.855
2	2017-10-11	11:30	712.80	432.00	833.49	0.855
3	2017-10-11	12:15	712.80	410.40	822.50	0.867
4	2017-10-11	11:35	691.20	388.80	793.05	0.872
5	2017-10-11	11:40	691.20	388.80	793.05	0.872
6	2017-10-11	11:45	691.20	410.40	803.86	0.860
7	2017-10-11	11:50	691.20	388.80	793.05	0.872
8	2017-10-11	11:55	691.20	410.40	803.86	0.860
9	2017-10-11	12:00	691.20	388.80	793.05	0.872
10	2017-10-11	12:05	691.20	410.40	803.86	0.860

kVAR Peaks	Date	Time	kW	kVAR	kVA	PF
1	2017-10-11	11:25	712.80	432.00	833.49	0.855
2	2017-10-11	11:30	712.80	432.00	833.49	0.855
3	2017-10-11	12:20	691.20	432.00	815.10	0.848
4	2017-10-08	01:00	669.60	410.40	785.36	0.853
5	2017-10-08	01:20	669.60	410.40	785.36	0.853
6	2017-10-11	11:45	691.20	410.40	803.86	0.860
7	2017-10-11	11:55	691.20	410.40	803.86	0.860

FAQ

What is causing my peak demand?

Using the Peaks Report, you can quickly zero in on which process is driving your peak demand.

Is my peak demand something that only happens once a month or is it fairly consistent?

Using the Peaks Report, you can determine whether one peak is substantially higher than the rest or whether the demand peaks are fairly consistent. Also, if the top 5-10 peaks are on the same day then the peak may be a one time or infrequent event.

Looking at the monthly demand graph will also show you graphically whether the demand shape is consistent or one spike throughout the month. If the peak is significantly higher than the demand at all other times during the period, you may have an opportunity to reduce it. Look for demand peaks occurring on the same day each week as well as for low demand days in the week to determine how your typical operation can be adjusted to reduce your overall demand peak.

Should I investigate Power Factor correction?

The first thing you need to know is whether you are billed for kVA demand as opposed to kW demand. Power Factor correction can be used to move the Power Factor closer to 1.0, which reduces your kVA demand.

Using the Peaks Report, you can get a first look at whether Power Factor correction might be of benefit. Determine the existing Power Factor at the time of your peak demand. If it is below 90%, it may warrant investigation.

Is my peak demand something that only happens once a month or is it fairly consistent?

Using the Peaks Report, you can determine whether one peak is substantially higher than the rest or whether the demand peaks are fairly consistent. Also, if the top 5-10 peaks are on the same day then the peak may be a one time or infrequent event.

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How does my non-operational load shape (holidays, weekends) compare with my working days?

Using the monthly demand graph, simply compare some working days with non-working days.

My monthly demand profile is fairly flat. Does this mean that there is no opportunity to reduce my demand?

It depends. If you are a 24-hour operation, then your demand may be flat because all processes need to be on in order to produce. If your operation is less than 24 hours, then you should see a drop in the

demand during the non-operating hours (typically through the night). You can look for the pattern on your monthly demand graph.

If your demand is still up during non-operating hours, you need to find out what is running and whether it needs to be. Note that this will not reduce your billed demand as this is based on your peak demand for the billing period. However, by reducing your non-operating time load, your energy costs will be reduced.

SETTLEMENT REPORT

This report is a summary report for the market participant. It is available for each wholesale facility that the market participant has registered.

The upper graph displays the Average Weighted Price (AWP) for each day of the month for the market Participant. This is based on Utilismart data. The AWP is calculated by multiplying each hour of usage by the HEOP price for the hour, summing all of the multiplication answers and then dividing by the total kWh. This gives an average weighted price for the day in cents and kWh. This value allows the market participants to bill their non-interval metered customers based on the HOEP.

The cost for energy is displayed on the lower graph on the left-hand side.

The total kWh's for the energy and losses is displayed on the lower graph, right-hand side.

