

Energy AnalytiX™

Product Brief for V10.6

July 2011



Advanced Energy Management Solution

In today's competitive global economy, with soaring energy prices and increasing environmental regulations, profitability and the ability to quickly analyze energy usage and closely control operating costs becomes ever more critical. A smart integrated energy management solution can easily save money, which translates into a greatly improved bottom line. Everyone is looking for ways to reduce consumption, monitor demand trends, lower energy costs and minimize carbon emissions. ICONICS Energy AnalytiX™ provides you with the analysis and information you need to implement continuous improvements.



Energy AnalytiX Default Overview Display

Energy AnalytiX is an off-the-shelf Energy Management System (EMS) that focuses on energy data analysis to increase efficiency and reduce overall operational costs. It helps with improving energy usage patterns, monitor energy reliability, and even forecast energy consumption. Information obtained from Energy AnalytiX can be used to:

- Optimize your energy management program
- Drill down to identify inefficient assets that consume too much energy
- Identify peak usage periods to load-balance assets and take advantage of off-peak rates
- Visualize energy usage per site, normalized by square foot or square meter
- Analyze carbon footprint per person / per site
- Monitor equipment energy usage trends and details
- Notify personnel with alerts when meters fail or energy usage is unexpectedly high
- Automatically email energy consumption and cost information to managers
- Leverage alternate energy sources for efficiency and cost savings

Features and Benefits

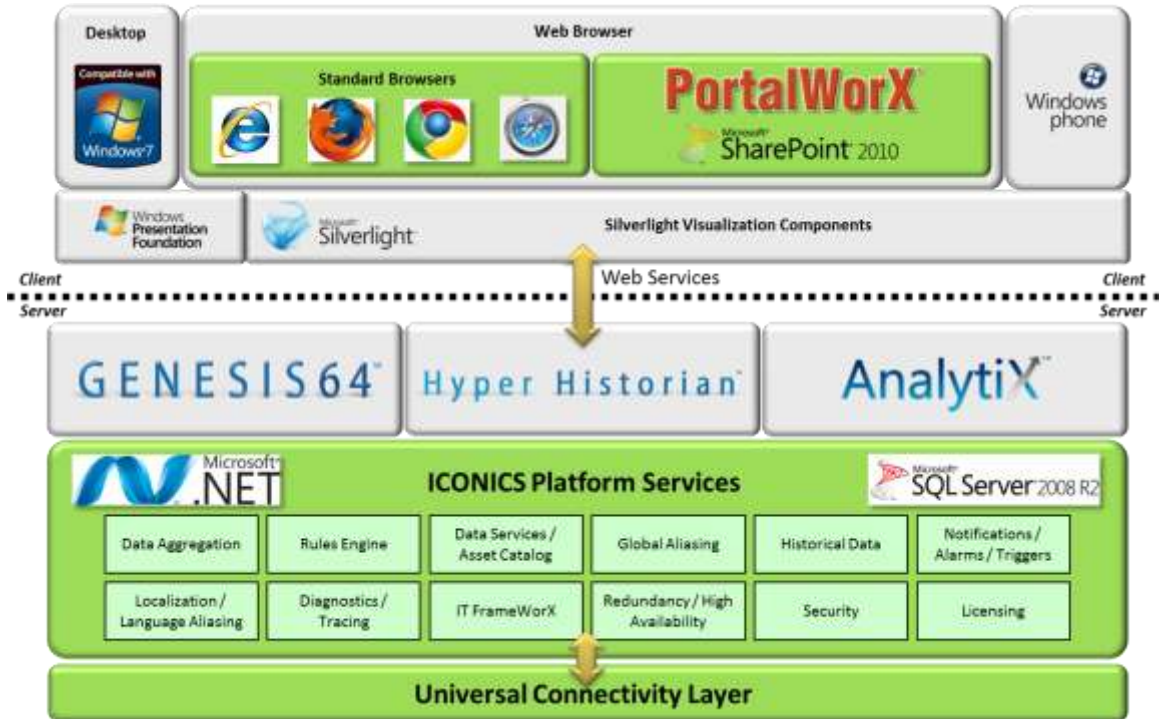
The goal of Energy AnalytiX is to enable key stakeholders to reduce costs, increase efficiency, and improve energy planning and cost allocation through the use of intuitive visualization techniques and insightful reports. Energy AnalytiX offers the flexibility to cater to just about any application in any industry, and to scale up from a single entity to a large enterprise or campus-wide installation. Virtually any process, production or building data that requires summarization, aggregation, comparison, and observation over time can greatly benefit from use of this solution. Energy AnalytiX provides the following high-level features and benefits:



Feature	Benefit
Built-in Energy Cost, Consumption, and Carbon Calculations	Easy to configure, not only to record and chart energy, but to correlate unexpected consumption with its probable causes.
Universal Connectivity	Universal Connectivity includes integrated OPC, OPC UA, BACnet, SNMP, Modbus, Databases, and Web Services, enabling immediate collection of meter data. Collect real-time data or import historical records.
Rich Visualization and Drill Down to Energy Offenders	Rich charting, graphics, tables, and reporting provide the analysis needed to find sources of energy waste. Powerful templates facilitate automatic reuse and rollups without additional engineering time.
Robust and Scalable	Built on top of the powerful ICONICS Platform Services, the system is proven to collect data from just a few meters, to multi-campus or multi-site deployments.
Quick to Deploy	Energy savings quickly add up when combined with overall project cost savings achieved by simply “Plugging Us On” your existing network.
Support for Multiple Units and Currencies	Users are able to view data in terms that they are familiar with, on a scale that makes sense to them.
Stay Informed, Anywhere, Any Time, Any Place	Information can be delivered to the desktop, to any browser, be built into Microsoft SharePoint® collaboration portals, or to the Windows Phone 7.
Monitor to Goals and Budgets	Not only monitor data, but monitor adherence to budget and reduction goals. Establish targets and view KPI’s as they track to those targets.

Energy AnalytiX Solution Architecture

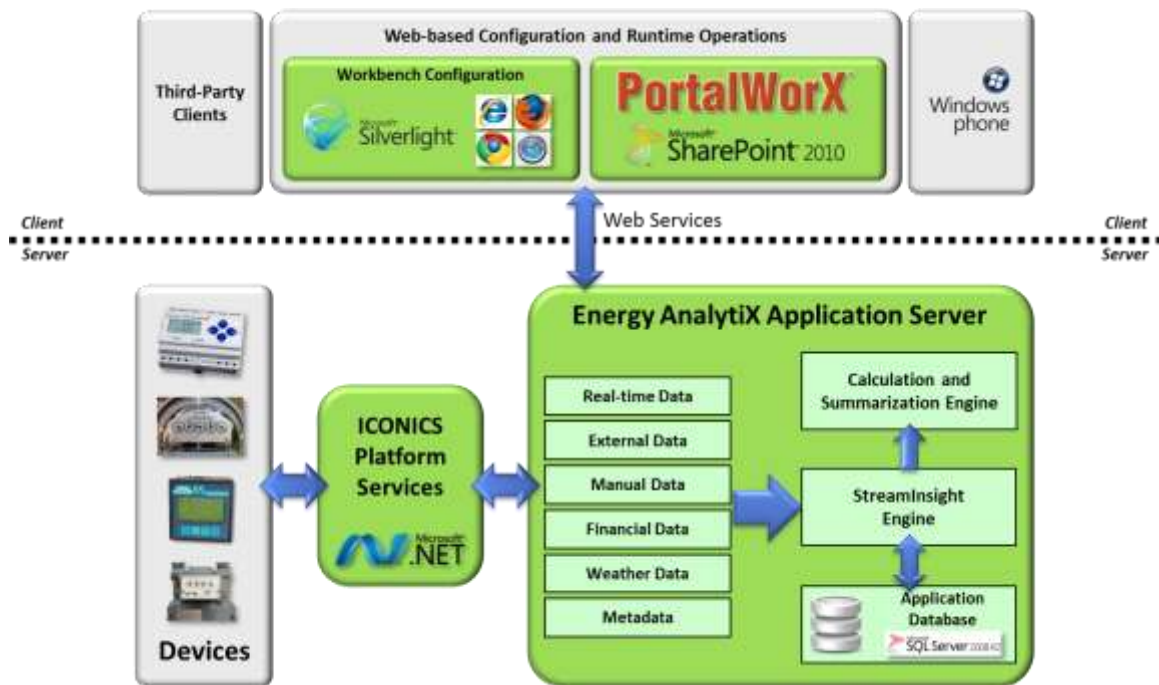
Energy AnalytiX is part of the AnalytiX suite of operational excellence solutions from ICONICS, built on top of the powerful Platform Services and as such it fits into the overall ICONICS V10 system architecture as shown in the diagram below:



ICONICS V10 System Architecture

Energy AnalytiX periodically processes raw data and populates its runtime operational database tables with energy cost, consumption and carbon data in increments of a configurable base summarization period, which by default is every 15 minutes. The Energy AnalytiX summarization engine processes values, events and associated variables collected via the ICONICS Platform Services and populates separate tables containing data for each base summarization period, as well as hourly, daily, weekly, monthly and annually summarized data. As a result, users can quickly leverage highly sophisticated data queries and reports with ease.

The Energy AnalytiX solution architecture (shown below) is broken up into several different key areas: the Silverlight Workbench configuration provider, Silverlight Runtime Views via PortalWorX, Application Database, Runtime Summarization Engine, StreamInsight complex event processing engine, and a comprehensive web services framework that connects it all together.



Energy AnalytiX Solution Architecture

Energy AnalytiX uses a Microsoft SQL Server 2008 R2 database engine as its configuration and runtime data storage repository. As the Energy AnalytiX engine collects data from your system, it analyzes those pieces in real time and processes, extracts, aggregates and summarizes that information to the appropriate level in your ISA-95 equipment hierarchy. This is a new and unique approach for energy data analysis that relieves the end user from the complicated task of collection, extraction, transformation and load while providing an aggregated view of the process performance. This revolutionary approach to energy analysis provides the following advantages:

- Collects and calculates energy usage data efficiently
- Normalizes and structures the collected data
- Summarizes at the asset level and performs rollup calculations
- Processes large volumes of database data at the source – to avoid network bottlenecks
- Exposes a rich set of database stored procedures to facilitate energy data analysis, grouping, sorting and filtering
- Simplifies integration with desktop clients as well as browser clients
- Centralizes user data to offer a single version of the truth

Energy-related information is available to clients such as ReportWorX™, PortalWorX™, GraphWorX64™, MobileHMI™, and third-party systems. Information can be accessed either via open database connectivity methods or WCF-enabled RIA web services methods, and of course via the rich visualization tools provided out of the box as part of Energy AnalytiX.

Energy Solution Suite for Any User in Any Industry

Any manufacturing plant, building or facility interested in analyzing its consumption of resources is a great fit for Energy AnalytiX. It is the ideal solution for monitoring corporate initiatives around energy reduction or carbon emissions (“Green”) goals. Energy AnalytiX simply plugs into your existing network and easily connects up to all meters. It is best suited for corporations that are looking to improve their energy efficiency and reduce overall operational costs, and is most commonly used for the industries of facilities management, utilities, large industrial plants, and multi-site industries such as retail. Below are some examples of the types of applications that can benefit from Energy AnalytiX:

- Commercial Buildings and Campuses
- Government Facilities
- Manufacturing Plants
- Process Plants
- Large Industrial Plants
- Water and Wastewater process plants
- Utilities
- Central Steam Plants



Built-in Energy Cost, Consumption and Carbon Calculations

Energy AnalytiX utilizes an extremely powerful calculation framework to provide you with all of the energy related information and analysis that you could possibly need. ICONICS provides a full set of predefined calculations that allow you to get up and running quickly by simply applying these calculations to your own meters and sensors. All energy calculations are defined using ICONICS’ powerful Expression Editor, which supports a wide variety of out-of-the-box functions and features. Examples of Calculation Categories are: General, Cost, Consumption and Carbon. As you can see below it is easy to add your own custom categories as well:

Calculation Categories		
Category Name	Description	Reserved
Click here to add new item		
> Carbon	Carbon emmissions calculations	<input checked="" type="checkbox"/>
Consumption	Consumption calculations	<input checked="" type="checkbox"/>
Cost	Cost calculations	<input checked="" type="checkbox"/>

Calculation Categories in Energy AnalytiX

For cost-based calculations users can define cost centers for energy assets and associate those energy assets to logical units within an organization for monitoring associated energy costs. Defining cost centers as tiers in the asset tree gives you a logical organizational unit where energy costs can be attributed. Cost centers can be logical units within the Asset tree (such as

Science Complex of a University Campus) or they can be tenants of a building or campus, or responsible departments within a manufacturing company (such as Shipping, Accounting or IT).

Energy AnalytiX' runtime views and reporting tools provide filtering support that end users can use to classify energy utilization and related costs using Cost Centers. The Energy AnalytiX runtime tracks changes to your budget as they occur, and takes Cost Centers into account as another "normalizing" factor within its cost-based calculations.

For advanced analysis that may be specific to your particular application, use the predefined calculations as a starting point and create your own derived calculations and comparisons using the powerful ICONICS Expression Editor, with full equation parsing and syntax checking.

Energy AnalytiX Calculations

Standard

Consumption	The actual measured energy needed to operate or run the system (a single asset or hierarchy of assets).
Input	The measured energy that is provided into the system.
Output	The energy generated within the system (i.e. from a Wind Turbine, Solar Panel, etc.) and exported for example onto the grid.
Loss	Anything that is typically not explicitly measured but is instead calculated by the difference between the input on one side and the consumption and output on the other side (Loss = Input - Consumption - Output).

Consumption

Normalized Consumption by Area	The Consumption normalized by area of a Campus, Building, Floor, etc. Derived from the Consumption calculation divided by the asset's Floor Space parameter.
Normalized Consumption by Occupancy	The Consumption normalized by average occupancy of a Campus, Building, Floor, etc. Derived from the Consumption calculation divided by the asset's Occupancy.

Cost

Normalized Cost by Area	The Cost normalized by area of a Campus, Building, Floor, etc. Derived from the Consumption calculation multiplied by the Rate, divided by the asset's Floor Space parameter.
Normalized Cost by Occupancy	The Cost normalized by average occupancy of a Campus, Building, Floor, etc. Derived from the Consumption calculation multiplied by the Rate, divided by the asset's Occupancy.

Carbon

CO ₂ Footprint	Measure of the carbon dioxide (CO ₂) emissions or greenhouse gasses (GHG) emitted by an energy asset.
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Weather Data

Analysis by Degree Days	Enables users to analyze their consumption and cost data by heating and cooling degree days for reporting purposes.
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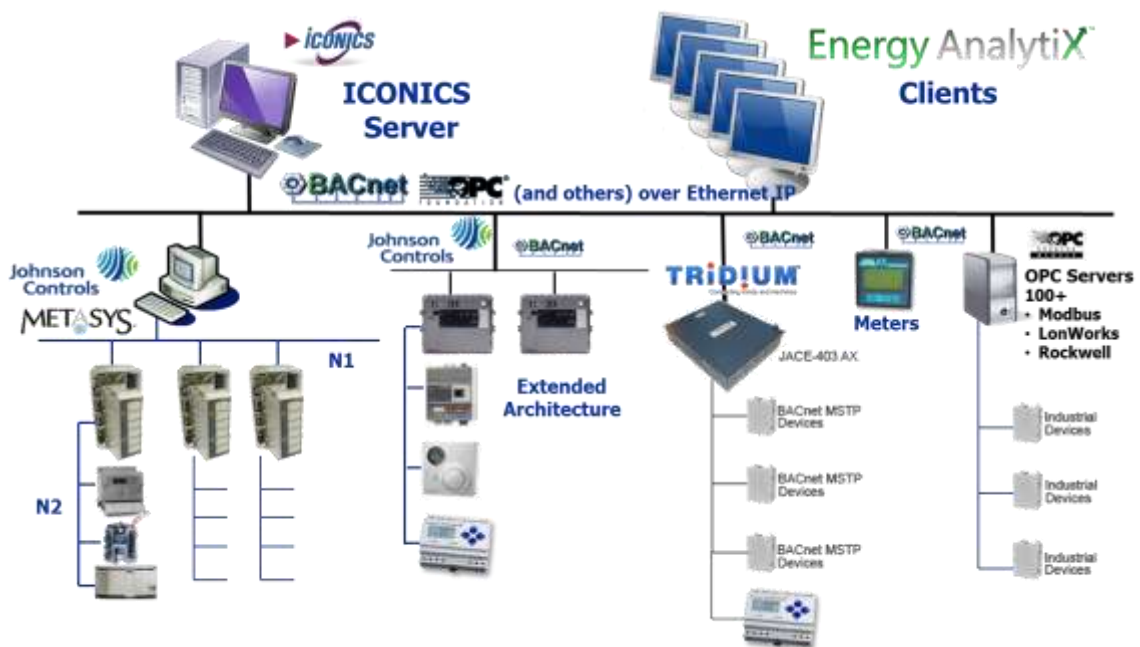
Create Your Own...

	Energy AnalytiX' flexible calculation framework empowers users to add their own custom calculations such as Consumption per Unit of Product Produced for example.
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Connect to Virtually Any Building or Factory Infrastructure

Energy AnalytiX provides the infrastructure you need to accumulate and compare relevant information. It aggregates and calculates derivations and provides very intuitive point-and-click roll up. With Energy AnalytiX you literally just “Plug-Us-On” and instantly integrate to almost any equipment that is already networked in a facility. In many cases no construction is necessary if meters or sensors are already in place.

If new metering is needed, just have an electrician “Clamp It On”, with a split core CT and plug the new meter into the network. For companies interested in how the Energy AnalytiX solution typically fits into a standard Building Automation architecture, refer to the diagram below:

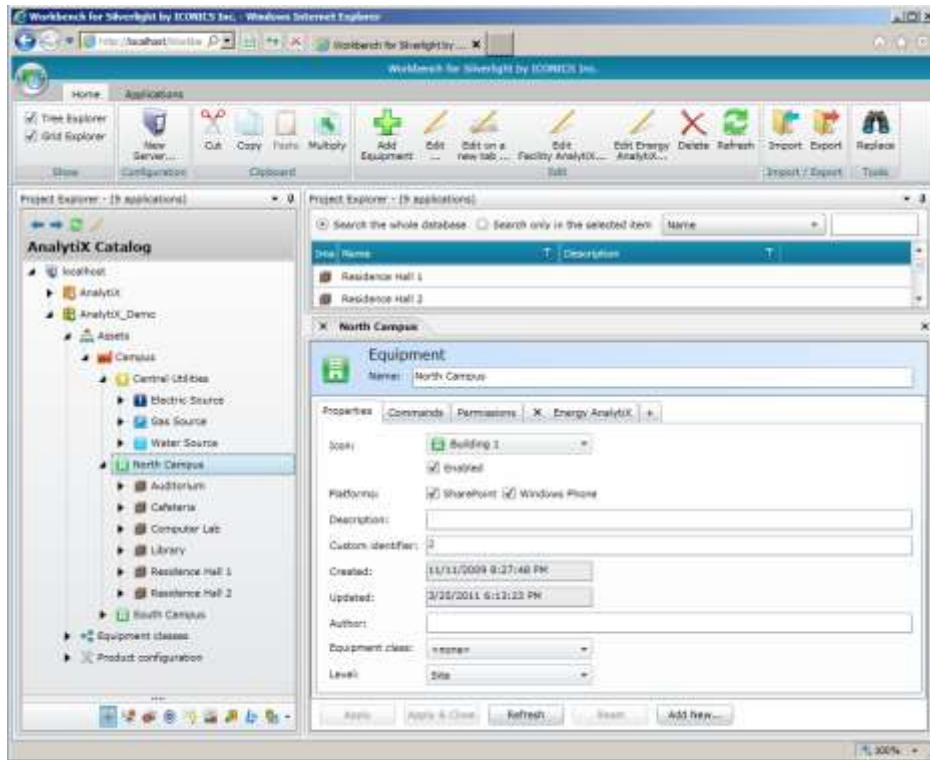


Energy AnalytiX within a typical Building Automation Architecture



ISA-95 Compliant AnalytiX Catalog Integration

Energy AnalytiX is built on top of the powerful AnalytiX Catalog in the Workbench Silverlight. This allows users to configure Energy Assets right within an ISA-95 compliant hierarchical tree structure along with utility sources and meters that will be used as sources for energy calculations.

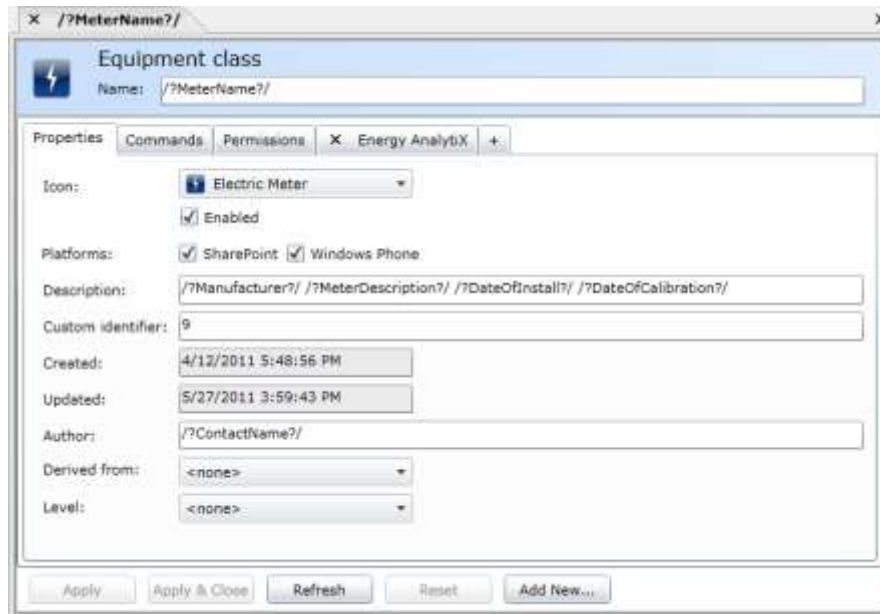


AnalytiX Catalog Workbench Silverlight Configuration Environment

The AnalytiX Catalog is a centralized repository for integrating business and manufacturing intelligence systems in the Silverlight Workbench. It provides a tree structure in which you can build your enterprise in the form of physical locations and business units, and organize equipment such as buildings and machinery in one centralized system for analysis by the ICONICS AnalytiX suite of products. The ISA-95 compliant tree structure provides a functional hierarchy for navigation and for data roll-ups. Physical devices along with logical areas of responsibility can be identified in the hierarchy. The asset tree provides a way to organize data sources (OPC, database, Web services) and physical entities in a logical hierarchical structure. For example, rather than OPC data sources being organized based on the address space of the server itself, these data sources can be organized based on the geographic/physical locations of the associated sensors (for example, by site, building, floor, and machine).

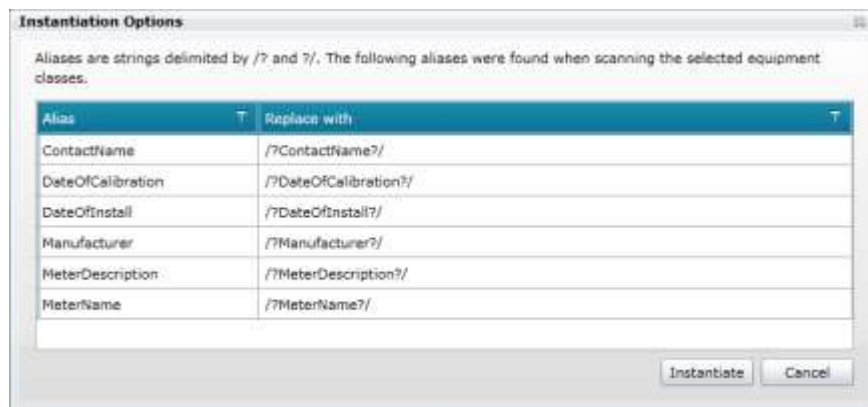
Energy AnalytiX integrates with the AnalytiX Catalog for defining Energy Assets, relationships between those assets, security on those assets, and a powerful command infrastructure for rich visualization.

Equipment Classes: The AnalytiX Catalog also introduces a time-saving concept called Equipment Classes, which allow you to “template” any asset or equipment type for rapid deployment. Energy AnalytiX users can define equipment classes such as meter types, which might include electricity meters, water meters, gas meters, oil meters, or meters from a variety of different manufacturers. Users can also template machines, equipment, or even entire buildings or campuses for rapid deployment.



Configuring a Meter Equipment Class in the AnalytiX Catalog

When instantiating an Equipment Class the user is presented with a list of parameters that the Equipment Class expects. For a Building-level template this might include pieces of information like Building Owner, Construction Year, Floor Space, and so on. For a Meter-level template it might include properties like Manufacturer, Serial Number, Contact Name, Date of Install, and Date of Calibration. This powerful concept of parameterization is what provides for such flexibility in Energy AnalytiX data analysis capabilities, and enables users to analyze their information from a virtually unlimited number of angles.



AnalytiX Catalog Instantiation of a Meter Equipment Class

Context-sensitive Commands to Quickly Navigate Your Enterprise

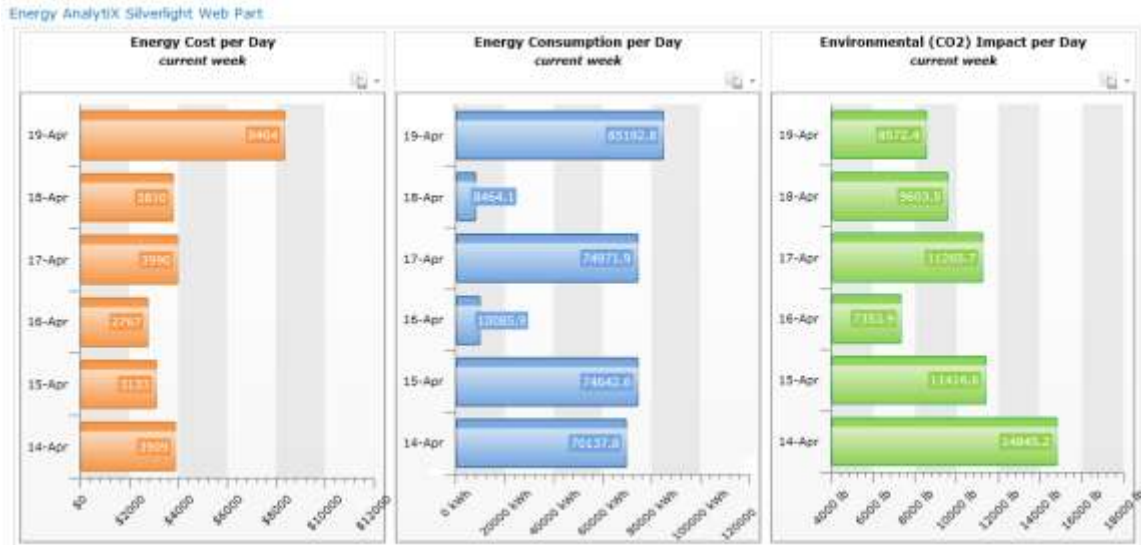
The same powerful AnalytiX Catalog that you build in configuration mode also drives much of the rich visualization for Energy AnalytiX on the runtime side. This is achieved using a flexible “Command” infrastructure to send information, displays, alarm views, reports, and much more from the AnalytiX Catalog tree to a desired destination web part. Commands can be made available at any level of your ISA-95 hierarchy and support the concept of inheritance as well to simplify configuration. The following Commands are presently supported:

Commands

Load Energy AnalytiX Data	Sends a new configuration to the Energy AnalytiX Viewer Web Part to visualize energy cost, consumption or carbon information. Requires a connection to an Energy AnalytiX Viewer Web Part.
Load Facility AnalytiX Data	Sends a new configuration to the Facility AnalytiX Viewer Web Part to visualize faults and probable cause information. Requires a connection to a Facility AnalytiX Viewer Web Part.
Load Display	Loads a GraphWorX64 Silverlight display and allows to optionally pass Global Aliases or Local Aliases to the display. Requires a connection to a GraphWorX64 Viewer Web Part.
Load Trend Display	Loads a TrendWorX64 Silverlight trend and allows to optionally pass Global Aliases to the trend. Requires a connection to a TrendWorX64 Viewer Web Part.
Load Alarm Display	Loads an AlarmWorX64 Silverlight alarm grid and allows to optionally pass Global Aliases to the viewer. Requires a connection to an AlarmWorX64 Viewer Web Part.
Set Global Aliases	Sets Global Alias themes to quickly change context.
Write Value	Writes any value to any data point accessible on the ICONICS application server network.
Open URL	Opens any URL in a new or specified target window.
Run Report	Executes a report directly from the Navigator using predefined parameter values. Once completed, use the Report Browser Web Part to view the report.
Load Report	Loads a report with predefined parameter values in the Report Executor Web Part. Users can make changes to parameter values before executing the report. Requires a connection to a Report Executor Web Part.
Load Executed Reports	Loads the contents of the specified ReportWorX folder in a Report Browser Web Part. Requires a connection to a Report Browser Web Part.
Run Transaction	Executes a BridgeWorX transaction to perform a desired workflow directly from the Navigator.
Make Phone Call	Makes an outgoing phone call from your mobile device to the specified phone number. Requires MobileHMI on a Windows Phone 7 device.
Send SMS	Sends an SMS message from your mobile device to the specified destination. Requires MobileHMI on a Windows Phone 7 device.
Send E-Mail	Sends an E-Mail message from your mobile device to the specified destination. Requires MobileHMI on a Windows Phone 7 device.

Rich Visualization and Drill-down to Energy Offenders

Energy AnalytiX provides you with tools to point to energy efficiency offenders and to correlate energy consumption with the causes of its expected use or its over or under use. Configure side-by-side comparison charts with ease to quickly and visually gauge energy consumption on similar types of equipment, comparably sized facility spaces, varying equipment operational states, and a wide variety of other parameters so that you can easily identify the abnormalities.



Energy AnalytiX Viewer Web Part

It is easy to configure runtime views, charts, and reports. Users simply point to their desired calculations or queries for their desired asset or level, and then configure the look and feel, layout, and style of the chart or grid component from there, choosing from a number of predefined options. Stay informed from anywhere, at any time, any place!

Energy AnalytiX leverages ICONICS PortalWorX for its visualization, built on top of the powerful Microsoft SharePoint 2010 platform. Within this framework, Energy AnalytiX data is just one of the valuable pieces of information that can be integrated into your role-based portals and dashboards. PortalWorX offers a wide variety of Silverlight web parts to integrate your ICONICS application data alongside other third-party information in a single, unified view. The key Energy AnalytiX web parts are summarized below, but for more information on ICONICS PortalWorX, please download the PortalWorX Product Brief from the ICONICS website at www.iconics.com.

Energy AnalytiX Viewer

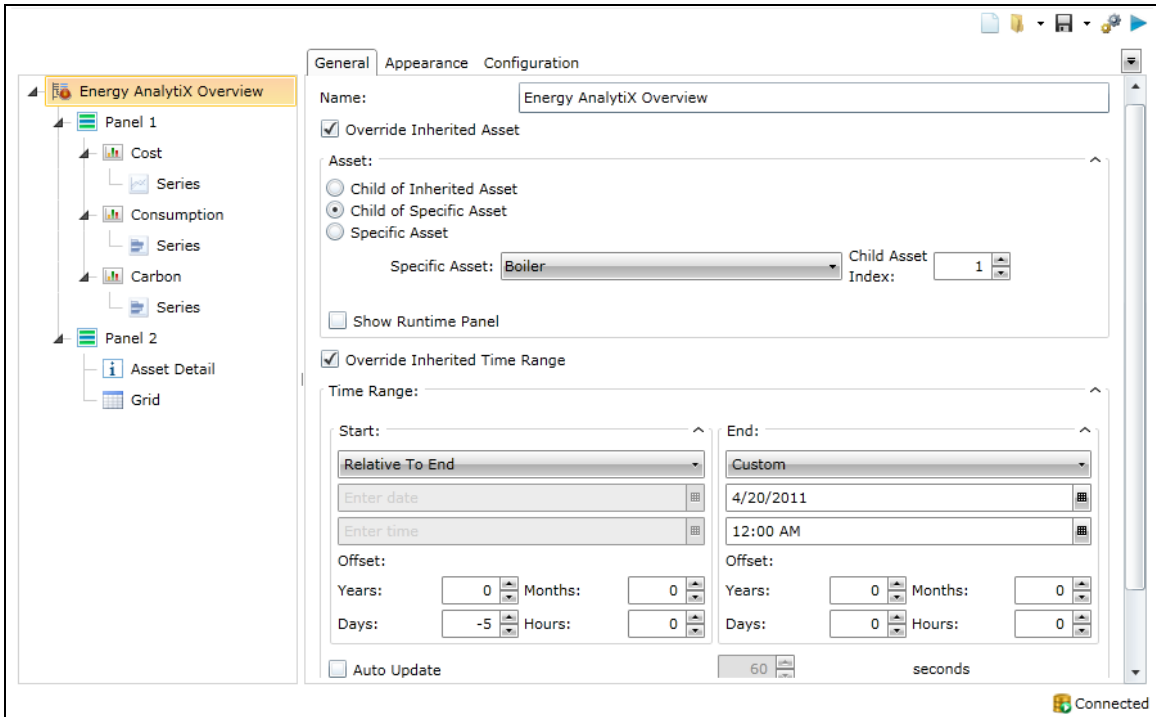
The Energy AnalytiX Viewer Web Part is an extremely flexible Silverlight component that allows users to build rich energy visualizations through a point-and-click interface. Configuration is simple yet powerful and supports a wide variety of chart types, layouts, grids and options. Users have the option to specify a default overview configuration that should be loaded whenever they visit their role-based Energy AnalytiX dashboard, but it is simple to switch between various charts and grids using the powerful Navigator Web Part based on the AnalytiX Catalog.

Drill down into energy offenders to uncover savings opportunities and optimizations. Charts support both vertical (asset-based) and horizontal (query-based) drill-down to enhance the ease with which users can identify areas of inefficiency.



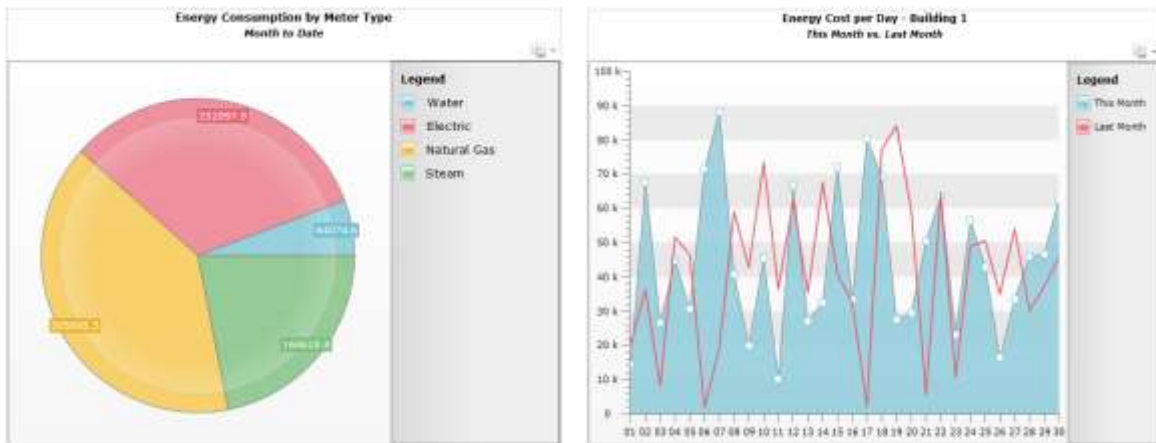
Energy AnalytiX Viewer Drill-Down Capabilities

Configuring the Energy AnalytiX Viewer is easy. Simply point-and-click to add charts, grids, panels, tab controls, and other details to the configuration, in order to compose a rich visualization control with information that is laid out in an intuitive fashion. Each visual item can be mapped to a query or calculation from Energy AnalytiX in order to expose cost, consumption, carbon, weather data, or any other information collected by the system.



Energy AnalytiX Viewer Web Part in Configuration Mode

Here are just a couple of additional examples of the types of powerful charts that can be built using the Energy AnalytiX Viewer:



Configure Pie Charts, Line Charts, Area Charts or Combine Different Chart Types

The following specification table lists the features and visual elements supported by the Energy AnalytiX Viewer:

Energy AnalytiX Viewer Specifications

General	
Supported Visual Elements	Chart, Grid, Tab Container, Panel, Detail Panel
Layout Options	Horizontal, Vertical, Embedded within other elements (Charts within Panels, Grids within Tabs, etc.)
Global Configuration Settings	Title, Created By, Created Date, Modified By, Last Modified Date, Description, Default flag (specifies which configuration should be loaded by default)
Toolbar Options	New, Load from File, Load from Database, Save to File, Save to Database, Viewer Settings, Configuration/Runtime mode switch
Time Range Options	
Now	Data initializes with the current time as the Start or End Time
Inherited	Start and/or End Time is inherited from the parent level
Relative to Start/End	Applies an offset (forward or backward) to or from the Start or End Time in Hours, Days, Months, or Years
Preset	First Day Current Week, First Day Last Week, First Day Current Month, First Day Last Month, Last Day Current Week, Last Day Last Week, Last Day Current Month, Last Day Last Month
Custom (Fixed)	Specify a fixed time to be used by default
Offset	All times above support an optional offset (forward or backward) in Hours, Days, Months, or Years
Auto Update	Automatically updates the chart/grid at the specified interval
Asset Selection	
Inherited	Inherit Asset information from parent or override at any level
Child of Inherited Asset	Show data for one of the children of the inherited asset. Allows to specify an index corresponding to which child should be shown by default (1 st , 2 nd , 3 rd , etc.)
Specific Asset	Show data for a specific asset from the AnalytiX Catalog
Child of Specific Asset	Show data for one of the children of a specific asset. Allows to specify an index corresponding to which child should be shown by default (1 st , 2 nd , 3 rd , etc.)
Show Runtime Panel option	Shows current asset selection in runtime and allows to switch dynamically between assets
Charts	
Linear Chart Types	Line, Stacked Line, Spline, Stacked Spline, Area, Stacked Area, 100% Stacked Area, Spline Area, Stacked Spline Area, 100% Stacked Spline Area, Step Line Area, Range, Spline Range, Stick, Candle
Column Chart Types	Bar, Stacked Bar, 100% Stacked Bar
Scatter Chart Types	Scatter, Bubble
Radial Chart Types	Pie, Doughnut
Horizontal Chart Types	Bar, Stacked Bar, 100% Stacked Bar
Drill-down Support	Asset-based (Vertical) or Custom (Horizontal)
Chart Appearance Options	
Legend	Visibility, Position, Item Orientation, Item Markers
Data Sampling	Function (Average, First, Last, Max, Min, Sum, Keep Extremes), Threshold

X-Axis	Visibility, Title, Show Labels, Label Format, Layout Mode, Step, Label Step, Label Rotation, Ticks Distance, Step Label Level Count, Step Label Level Height
Y-Axis	Visibility, Title, Show Labels, Label Format, Step, Label Rotation, Fixed Range (Min and Max values)
Chart Series Options	
Override Chart Type at Series Level General Settings	Allows to overlay different types of series on the same chart Visibility, Title, Line Color, Thickness, Fill Color, Foreground Color, Item Animation Duration, Series Animation Duration
Point Markers	Visibility, Marker Stroke Color, Thickness, Marker Fill Color, Marker Shape
Labels	Visibility, Format, Show Connectors, Show Zero Value Labels, Distance from Point, Support for Images
Tooltips Data	Visibility, Format Bound to any available Energy AnalytiX calculation or query
Grids	
Rows	Background Color, Alternate Background Color (for banded rows support)
Column Options	Visibility, Header Title, Width (in pixels or relative), Background Color, Header Font (Color, Size, Style, Alignment), Cell Font (Color, Size, Style, Alignment), Content Type (Value, Image), Sort (Ascending, Descending, None)
Filtering Options	Equal, Less Than, Less Than or Equal, Greater Than, Greater Than or Equal, Not Equal, Starts With, Ends With, Contains, Does Not Contain, Is Contained In
Grouping Options Data	Group By any column, with optional default sort order Bound to any available Energy AnalytiX calculation or query
Panels	
Layout Orientation	Specifies if objects within the Panel will be stacked vertically or horizontally
Asset Detail Panels	
Field Settings	Visibility, Label, Label Font (Color, Size, Style, Alignment), Value Font (Color, Size, Style, Alignment)
Asset Image	Visibility, Stretch (None, Fill, Uniform, Uniform to Fill), Width, Height
Data	Bound to any available Energy AnalytiX calculation or query
Appearance Options (Available within all visual elements in the Viewer)	
Title	Text, Format, Color, Size, Style, Alignment
Subtitle	Text, Format, Color, Size, Style, Alignment
Border	Color, Thickness
Background	Color

Navigator

Navigate your ISA-95 asset and equipment hierarchy using an intuitive tree format, with context-sensitive commands to communicate new data to related web parts. For a complete list of the commands that are provided as part of the Navigator runtime, see the section above titled “Context-sensitive Commands to Quickly Navigate Your Enterprise”. The Navigator generally acts as a “provider” web part because it provides data to “consumer” web parts such as the GraphWorX64 Viewer, TrendWorX64 Viewer, Report Executor, and so on. To establish a connection between the Navigator and one of its consumer web parts, simply use the Connections menu in edit mode of the SharePoint web part.

The Navigator Web Part can also browse and execute reports natively via the ReportWorX provider, if ReportWorX is installed and accessible from the ICONICS application server.



Scheduled Reports Help Meet Government Regulations

Are you being driven by corporate or government requirements to reduce energy costs or carbon emissions? Are you trying to achieve Energy Star or LEED certification? If so, Energy AnalytiX can provide you exactly the data that you need for this and other regulatory reporting requirements.

With Energy AnalytiX it is easy to configure powerful and detailed reports that expose information from the Energy AnalytiX database. Start from one of the preconfigured reports or customize your own report format using the flexibility of Microsoft Excel combined with the power of ICONICS' ReportWorX reporting tool.



Energy AnalytiX leverages the award-winning ReportWorX technology to turn data into actionable information in the form of reports. ICONICS brings you the most advanced reporting tool available today, taking maximum advantage of Microsoft's powerful technologies. ReportWorX, based on Microsoft .NET, enables you to push data into your reports and to control the report execution frequency and delivery format (Excel, PDF or HTML). Once generated, the reports can be automatically sent to local or remote disk drives, redundant printers, PDF files, Web servers, Fax machines, or multiple users via E-Mail.

ReportWorX allows for the execution of Energy reports in conjunction with other logical areas of your process, based on scheduling triggers within ICONICS Unified Data Manager. The criteria by which reports can be triggered include:

- Manually based on direct operator commands
- Periodically based on time and/or date
- Based on alarms or events
- Based on real-time OPC tags
- Expressions or calculations
- Based on NT events
- File system and database value changes

Energy AnalytiX charts, views and reports help personnel to make intelligent decisions about where and when to allocate or curtail their top energy-consuming assets. The difference between running a machine or not running a machine during times of fluctuating energy costs can make a huge impact to your bottom line!

Leverages Microsoft Technology and ISA-95 Asset Hierarchy

Energy AnalytiX offers the following Microsoft technology benefits and features to bring you a complete energy management solution, providing fast returns from your energy reduction and sustainability initiatives:

Feature	Benefit
ISA-95 Asset Hierarchy	Speed up deployment time by integrating with your existing ISA-95 asset structure
Microsoft Silverlight	Rich visualization and charting components for thin-client, IT-friendly deployment
Microsoft .NET Framework	Web services to enhance the computing experience with highly integrated communications and information
Windows Server 2008 Platform	Leverage the foundation on which Microsoft has built all of its latest server-class products
Role-based Collaboration Dashboards using SharePoint	Visualize energy cost, consumption & carbon information within a consistent, unified, single version of the truth
Microsoft SQL Server	Comprehensive data management platform with open database technology for 3 rd party integration
Microsoft SQL Server StreamInsight	Complex Event Processing (CEP) engine
Windows Communication Foundation (WCF)	Secure, reliable and transacted messaging and interoperability
Parallel Processing	Distributes the calculation processing load across all available processors
Microsoft SQL Server CLR stored procedure	Exposes rich data retrieval and drill-down capability via database stored procedures

System Requirements

Energy AnalytiX 10.6 requires the following hardware and software components. System requirements may vary based on application size, system performance requirements, and loading factors.

Operating Systems Supported

Energy AnalytiX 10.6 presently supports the following systems:

- Microsoft Windows Server 2008 64-bit
- Microsoft Windows Server 2008 R2

Minimum Hardware and System Requirements:

Component	Requirement
CPU	Dual core 64-bit processor or better
Memory ¹	4 GB of memory required (6 GB recommended)
Hard disk	At least 20 GB of free hard disk space required (at least 50 GB is recommended to allow for SQL Server database growth)
Drive	8X speed DVD-ROM for installation
SQL Server ²	Microsoft SQL Server 2008 R2 or later (Note: Express Edition is supported in demo mode only for 180 days)
SharePoint	Microsoft SharePoint 2010 (all editions are supported)
Excel	Microsoft Office Excel 2003 or above (required for ReportWorX only)
Web Server	Microsoft Internet Information Services (IIS) 7.0 or later
Web Clients ³	Via Silverlight web parts: Internet Explorer 7 or later, Firefox 3 or later, Safari, Chrome

Note 1: It is recommended that the system page file size be a minimum of four (4) times the size of installed (physical) RAM.

Note 2: The user also has the option of designating a remote SQL Server, in which case the user will not be forced to install SQL Server locally.

Note 3: SharePoint 2010 supports other browsers with known limitations. Please consult with the Microsoft online documentation for a list of those known limitations.

About ICONICS

Founded in 1986, ICONICS is an independent software developer of award winning real-time visualization, data historians, automation intelligence and suite of analytics software solutions. ICONICS products are installed in 70% of the Fortune 500 companies around the world, helping customers be more profitable, agile, efficient and sustainable.

ICONICS is a long time Microsoft Gold Certified Partner and Winner of the very prestigious Microsoft Partner of the Year Award, providing advanced software for many end users and technology suppliers. ICONICS has over 250,000 applications installed in multiple industries worldwide.

ICONICS cultivates an international culture of innovation, creativity and excellence in product design, development, technical support, sales and service. World headquarters are located in Foxborough, Massachusetts, USA.

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