# Energy AnalytiX Quick Start

APPLICATION NOTE

October 2015

**Description:** A quick start guide to deploying Energy AnalytiX.
**General Requirement:** Familiarity with and knowledge of your energy-related assets and equipment, such as meters, devices, and logical areas for which you would like to analyze energy usage.

## Introduction

This topic provides a checklist of the steps for getting started with Energy AnalytiX from a configuration and runtime operations standpoint. Note that much of Energy AnalytiX's configuration happens in the AssetWorX provider, so you will be using a combination of both Energy AnalytiX and AssetWorX to configure your energy information. It is important that you realize that deployment of Energy AnalytiX requires considerable planning, and as such should involve all of the key stakeholders that are part of your energy management initiative.

> **NOTE:** This application note is intended to be a quick start guide primarily for planning purposes and to give you an understanding of the recommended sequence of steps for efficiently deploying your Energy AnalytiX application. For more details about any step mentioned herein please consult the Help documentation as well as other available application notes.

## Before You Begin

The following steps should be completed before proceeding with the rest of this quick start guide:

- An AssetWorX configuration database, which hosts all asset related and also Energy AnalytiX related information, must be in place and must be activated. For more information, refer to the "Energy AnalytiX Configuration Databases" Help topic.
- Energy AnalytiX must be installed to your AssetWorX configuration database. It can be installed via the AssetWorX provider's Available Solutions node. For more information, refer to the "Installing Available Solutions" Help topic for AssetWorX.
- Plan the asset tree with your energy-related needs for Energy AnalytiX in mind. Refer to the "Strategies for Building the Asset Tree" Help topic for AssetWorX.

> **NOTE:** Both Energy AnalytiX and AssetWorX appear as providers in the Project Explorer area of Workbench, as shown in Figure 1.

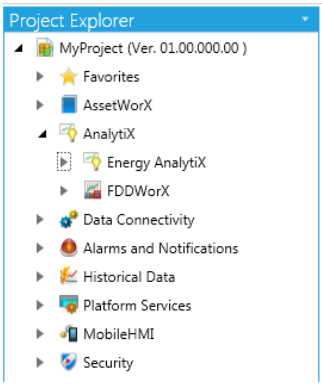


**Figure 1 - Energy AnalytiX Provider in Workbench**

## Checklist for Deploying Energy AnalytiX

To configure Energy AnalytiX properly, you will need to follow these steps:

1. Configure the following properties in **AssetWorX**:

   - **Units**: For step-by-step instructions, refer to the Help topic "Defining Units of Measure" for AssetWorX.
   - **Temperature sources (optional)**: For step-by-step instructions, refer to the Help topic "Defining Temperature Sources" for AssetWorX.

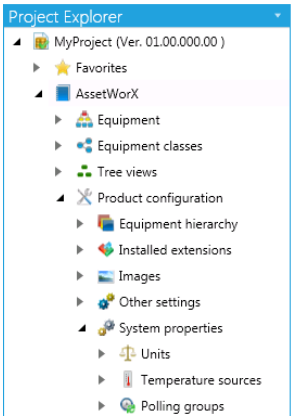


**Figure 2 - Units and Temperature Sources in AssetWorX**

2. Configure the following **Energy AnalytiX** general options:

   - Configure General Options, including options for logging meter data, in the Settings tab within the General Options dialog of the Energy AnalytiX provider. For more information, refer to the "Setting Options for Processing and Data Collection" Help topic.

- Use the Table Maintenance tab within the General Options dialog to set conditions for removing old energy data from tables. For more information, refer to the "Setting Conditions for Removing Old Energy Data from Tables" Help topic.
- Use the External Data Processing section under the Advanced Tab to manage the process of importing data from external sources. For more information, refer to the "External Data Entry" Help topic.
- Use the Historical Data section under the Advanced Tab to integrate data from Hyper Historian (or other historians) for use in meters or bindings. For more information, refer to the "Integrating with Hyper Historian" or "General Options Node for Energy AnalytiX" Help topics.
- Use the Distributed Asset Catalog section under the Advanced Tab to balance the calculation load among multiple sites. For more information, please refer to the "Energy AnalytiX – Distributed Architecture" app note.

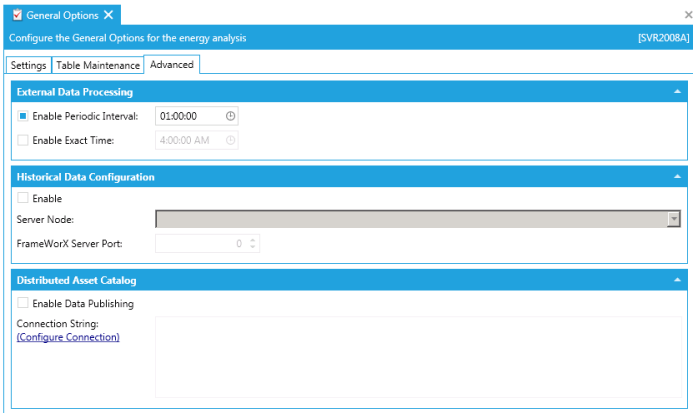


**Figure 3 - Energy AnalytiX General Options**

3. Configure information for performing **energy-related calculations**:

   - Configure Meta Data which can be used for energy calculation or normalization under Meta Data folder in the Energy AnalytiX tree. For more information, refer to the "AnalytiX Properties" Help topic.
   - Configure meter types using the Consumption folder in the Energy AnalytiX tree. For more information, refer to the "Adding Meter Types" Help topic.
   - Configure cost centers for monitoring energy costs within business units using the Cost Centers sub-tab within the Costs dialog. For more information, refer to the "Defining Cost Centers" Help topic.
   - Use the Rate Models sub-tab within the Costs dialog to configure rate models for various utilities, which are used in cost allocation and reports that include energy costs. For more information, refer to the "Defining Rate Models for Utility Sources" Help topic.
   - Configure your energy-related calculations and calculation categories under Calculations Library folder in the Energy AnalytiX tree. Refer to the "Defining a Library of Calculation Templates" topic for more information.

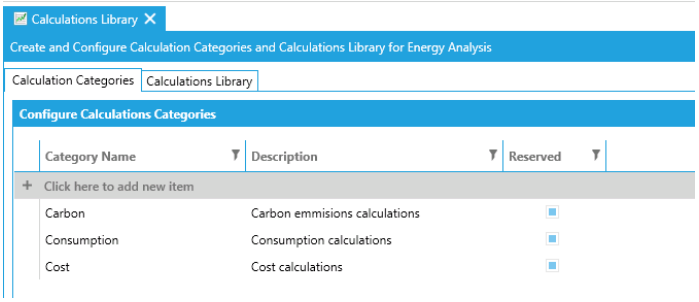


**Figure 4 - Energy AnalytiX Calculations**

4. In AssetWorX, define your **Energy AnalytiX assets** within the asset tree. The asset tree must include: your energy assets, meters for your energy assets, and your utility sources. For more information, refer to the "Configuring the Asset Tree for Energy AnalytiX" Help topic.

   Here is a brief overview of the steps required in order to configure your Energy AnalytiX assets in the asset tree:

   - Define the **Utility Sources** that supply energy to your corporate and business resources. Refer to the "What is a Utility Source and How Is It Used?" topic for information. In summary, you will need to follow these steps:
     - Configure Your Utility Sources
     - Specify Each Utility Source's Cost Center
     - Configure Each Utility Source's Meter Type and Rate Model
     - Define Each Utility Source's Bindings
     - Activate Each Utility Source for Energy Analysis
   - Define your **Meters** that measure your energy consumption, inputs, outputs, and loss for systems such as water flow or air flow. These meters can be real or virtual. For more information, refer to the "What is a Meter and How Is It Used?" topic. In summary, you will need to follow these steps:
     - Configure Your Meters
     - Specify Each Meter's Cost Center
     - Define Each Meter's Bindings

- Activate Each Meter for Energy Analysis
- Identify and enable Energy AnalytiX on the **Energy Assets** in your asset tree. An energy asset is any equipment for which you want to collect and aggregate energy data. For more information, refer to the "What is an Energy Asset?" topic. In summary, you will need to follow these steps:
  - Identify Your Energy Assets
  - Define Each Energy Asset's Bindings
  - Specify Each Energy Asset's Cost Center and Energy Budget (optional)
  - Configure Calculations for Each Energy Asset
  - Activate Energy Analysis for Each Energy Asset

5. At this point you should be ready to start up your **Energy AnalytiX service** to begin collecting and analyzing data for your configured meters and energy assets. Once the service is started you can of course continue to add to your configuration and make runtime changes as your application needs evolve, but you should perform the above steps at a minimum for at least one branch of your asset tree so that you can verify the application is collecting the appropriate data and outputting the desired information.

   Here are a few things to verify when you feel that you are ready to start collecting data with Energy AnalytiX:

   - You should first verify that the service settings for processing and data collection are appropriate for your application. For more information, refer to the "Setting Options for Processing and Data Collection" topic, on the Settings sub-tab in particular.
   - You may also want to review some tips and tricks related to optional optimizations that can be enabled or disabled via server-side configuration files. For more information, refer to the "Optimization" topic.
   - Once you have confirmed that the above settings are appropriate for your application, start up the Energy AnalytiX service either by clicking on the traffic light in the Workbench-SL, or by launching "Services" from the Windows Control Panel, Administrative Tools, and starting the ICONICS Energy AnalytiX service.

6. Upon service startup, Energy AnalytiX will verify that you have an appropriate license for the number of enabled Meters. You can check on this by opening up the MonitorWorX Viewer and clicking on the AnalytiX tab.

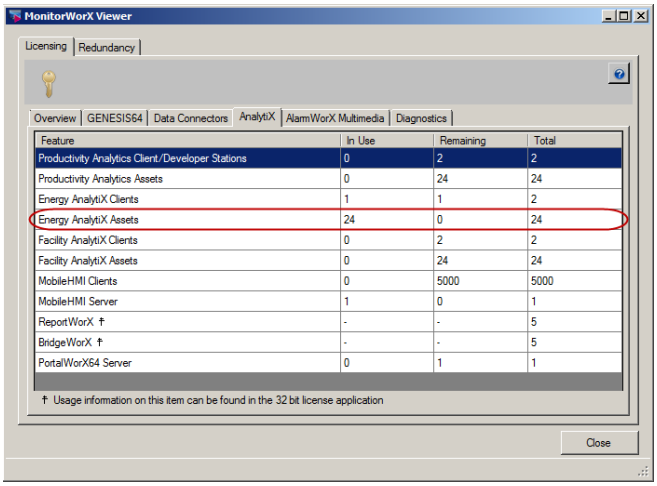


**Figure 5 - Energy AnalytiX License in MonitorWorX Viewer**

**NOTE:** Demo mode for Energy AnalytiX allows for up to 24 enabled Meters and 2 client connections for 12 hours of runtime. In order to run Energy AnalytiX in a production environment, please contact ICONICS for a full license.

Energy AnalytiX posts diagnostic information to the Windows Event Viewer, and in general it is a good practice to check the Event Viewer when you are first starting up to ensure that there are no errors or warnings coming from the Energy AnalytiX service.

**NOTE:** If you do see any errors or warnings coming from your "IcoEaService" Event Source, we strongly recommend that you turn on TraceWorX for Energy AnalytiX at the Warning level at a minimum for more detailed diagnostic information.

**NOTE:** To confirm that Energy AnalytiX is collecting data for your enabled Meters, you may want to examine the timestamps in the EA_MeterData and EA_MeterSummaryBase tables. The data in these tables should change at rates equal to the intervals specified in the Data Logging Tables and Base Summary Tables settings on the Settings sub-tab of the General Options dialog. This requires some basic knowledge of the SQL Management Studio environment.

7. You can also check your asset count and your database information that is being used in your project by going to the Energy AnalytiX provider in the Workbench-SL and selecting "Monitor View".
8. As shown in Figure 6, you can click on the different tabs to get the count of all the assets, the database load information, etc.

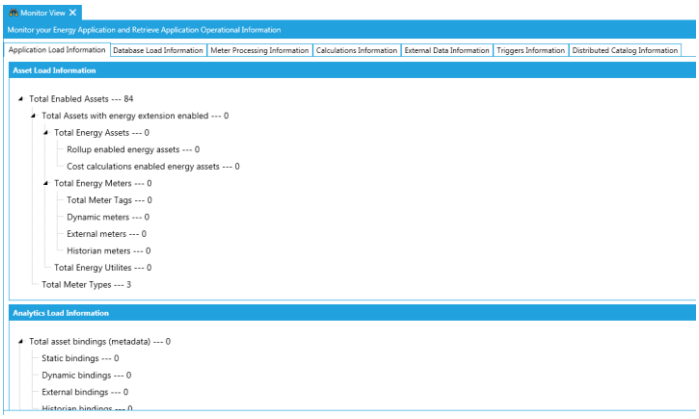


**Figure 6 - Monitor View**

9. Now that the Energy AnalytiX service is running and collecting data, you can focus on **creating runtime views and dashboards** for role-based visualization and analysis. This involves:

   - Configuring charts, grids and drill-down analysis within the Energy AnalytiX Viewer, as outlined in the "Configuring the Energy AnalytiX Viewer - Quick Start" Help topic. Some users find it helpful to create a simple layout within PortalWorX-SL first to serve as the basis for creating various Energy AnalytiX Viewer configurations. Others prefer to configure it from within a GraphWorX64 display.
   - Configuring right-click menu items, as described in the "Setting up Commands for Runtime Navigation" topic, so that runtime users can run or access the charts and reports that they need to be able to use.
   - Making those available for viewing within one or more of the powerful ICONICS visualization platforms. You can utilize your Energy AnalytiX Viewer configurations and right-click commands within the following environments:
     - GraphWorX64 (WPF or Silverlight displays)
     - PortalWorX-SL (thin client dashboard)
     - PortalWorX-SP (SharePoint-based portal)

   **NOTE:** Refer to the Help documentation for each respective product for more information on how to add Energy AnalytiX into that container. For the purpose of this Quick Start application note, we'll now walk through adding an Energy AnalytiX Viewer into PortalWorX-SL.

10. This section describes how to create a simple layout with the Energy AnalytiX Viewer in PortalWorX-SL. For more information, refer to the "Adding an Energy AnalytiX Viewer in PortalWorX-SL" topic, as well as the "PortalWorX-SL - Quick Start" application note.

- Launch PortalWorX-SL via the Start Menu. Login to the Security Server if required.
- The AssetWorX Navigator should already be visible on the layout by default. If it is not, you can add it by clicking on the Project tab, clicking on "Navigator", and then "Assets".
- Use the Ribbon, the Toolbox, or an existing blank control area to add an Energy AnalytiX Viewer to the layout.

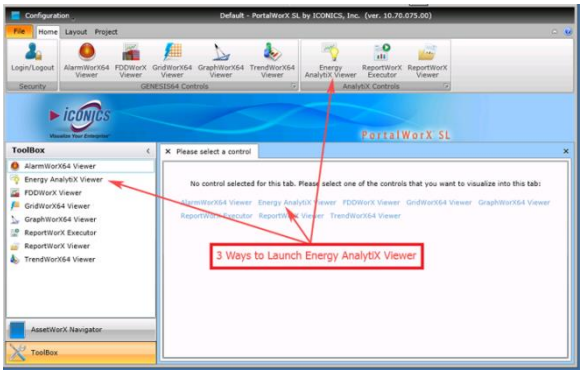


**Figure 7 - Adding an Energy AnalytiX Viewer to a Layout**

- The Energy AnalytiX Viewer will connect to its active configuration database and then display the "Configure Web Part" dialog. You can customize the settings in that dialog or leave them as they are and click "Next".

**NOTE:** The "Name" field here corresponds to the "Target" field in all command dialogs, and requires that you to specify a unique name for each object in your layout. This is to facilitate loading multiple different charts, displays, etc. into multiple different viewers with just a single click. Use the "Load Energy Data" command to load Energy AnalytiX Viewer configurations.

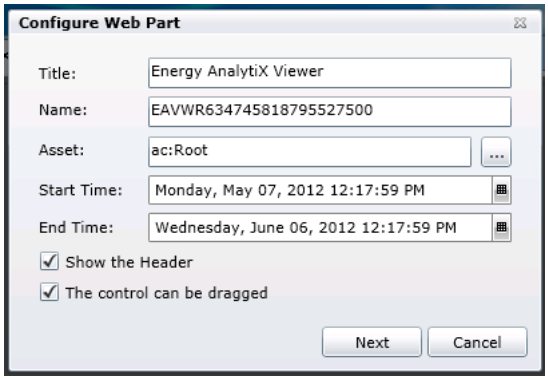


**Figure 8 - Configure Web Part Dialog**

- This brings you to the main configuration dialog for the Energy AnalytiX Viewer, which allows you to easily add charts, grids, panels, tab controls, and other details to compose a rich visualization control.

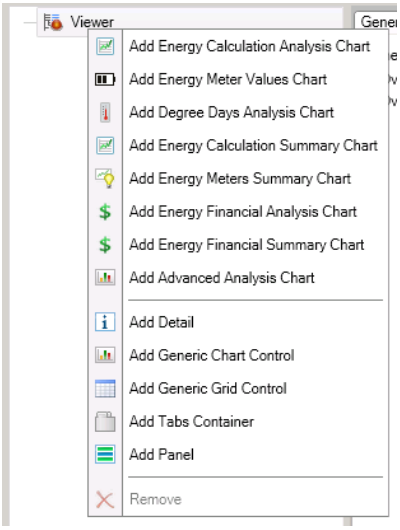


**Figure 9 - Adding controls**

- If you have already created some Energy AnalytiX Viewer configurations you can simply use the Load button to open an existing configuration.
- If you have not yet created any configurations, refer to the "Configuring the Energy AnalytiX Viewer - Quick Start" topic for more information.

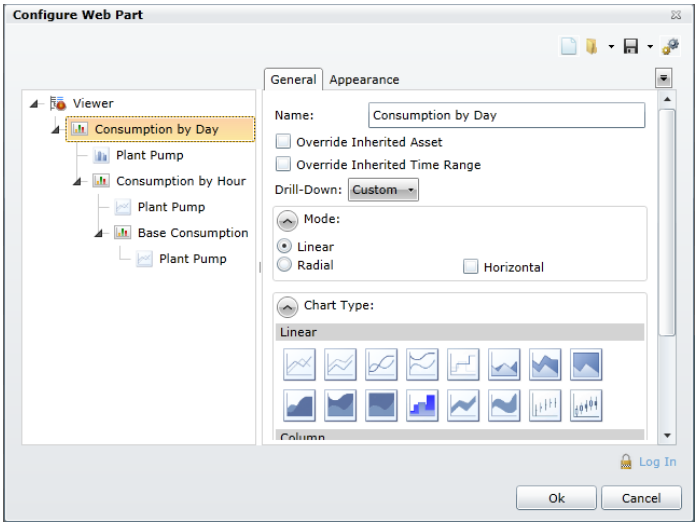


**Figure 10 - General tab**

Now you should be off and running with Energy AnalytiX! For more information on any section, refer to the referenced Help topic name, or search the product Help documentation for your desired areas of interest.