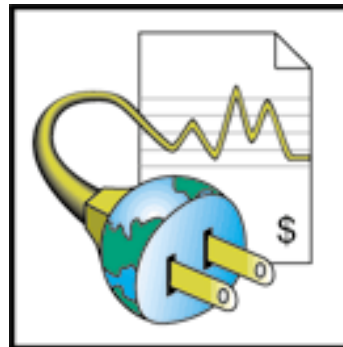
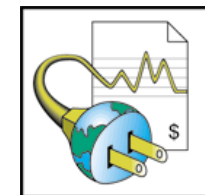


Measurement, Verification and Power Quality System

RSEnergyMetrix™
Scaleable Web-based Energy Management



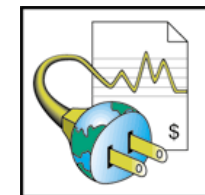
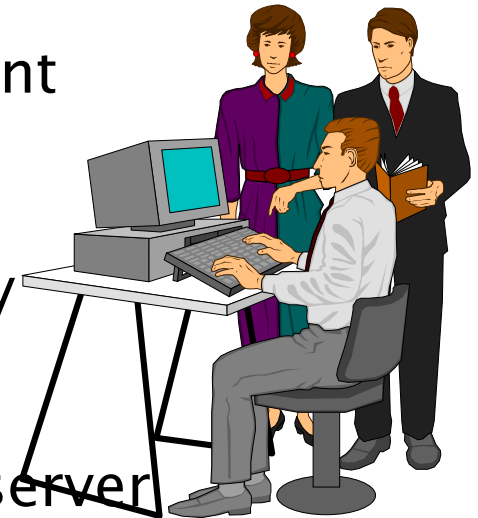
Product Information



Introducing RSEnergyMetrix

RSEnergyMetrix:

- Scalable suite of energy management software.
- Complete energy information and management solution.
- Captures, analyzes, stores, and shares energy data across the entire enterprise.
- Combines data communication tools, client-server software, and Microsoft's .NET web technology to put energy information right



Introducing RSEnergyMetric

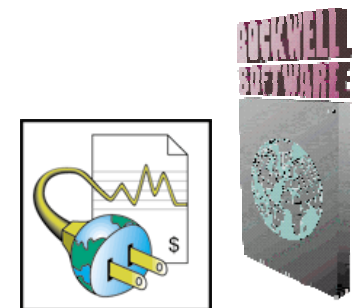
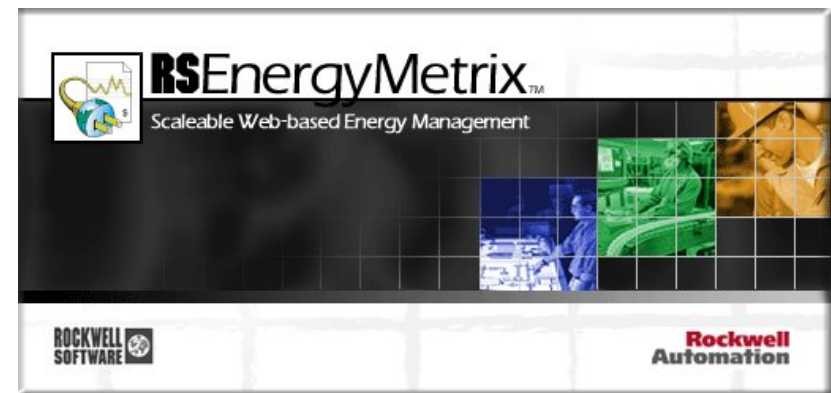
Why RSEnergyMetric ?

- Measurement & Verification of energy savings projects
- Correlate energy costs to production costs.
- Provide accurate cost accounting based on energy consumption.
- Generate energy reports and charts for a process, department, facility or an enterprise.
- Verify utility bills and negotiate better rates
- Make decisions on electrical capacity.
- Capture power quality events.
- Alarming to avoid unscheduled shutdowns



RSEnergyMetrix Advantages

- Scalable, Upgradeable & 3rd Party Device Support
- High Functionality Base Package
 - Load Profiling
 - Cost Allocation
 - Tariff Analysis
 - Billing
 - A-B Device Connectivity
- Powerful Upgrade Options
 - 3rd Party Connectivity – OPC
 - Enhanced Reports and Charts
 - Custom Reports and Charts
 - Real Time Power Parameters
 - Power Quality information



RSEnergyMetrix is Scalable – Base

RSEnergyMetrix 9307-EM...

- - X-MGR (Manager)
 1. 8-MGR 0 - 8 meters
 2. 64-MGR 9 – 64 meters
 3. 10K-MGR 65 – 10K meters

Base Package

- Configuration
- Administration & Database
- Basic Reports & Charts

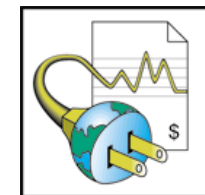
RSEnergyMetrix 9307-EM...

- - RT (Real Time)
- - 3PX (3rd Party Connectivity)
- - RPT (ReportsPlus)
- - CHT (ChartsPlus)
- - DB (SQL OEM Bundled Package)

Add-On Options:

- RT - RSPower32 Functions
- 3PX - 3rd Party Connectivity
- RPT - Advanced Reports
- CHT - Advanced Charts
- DB - SQL2000 Package

All options are installed with Manager



RSEnergyMetrix is Scalable – Options

RSEnergyMetrix 9307-EM...

- - X-MGR (Manager)
 1. 8-MGR 0 - 8 meters
 2. 64-MGR 9 – 64 meters
 3. 10K-MGR 65 – 10K meters

Base Package

- Configuration
- Administration & Database
- Basic Reports & Charts

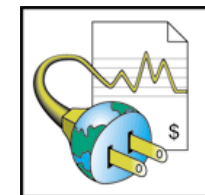
RSEnergyMetrix 9307-EM...

- - RT (Real Time)
- - 3PX (3rd Party Connectivity)
- - RPT (ReportsPlus)
- - CHT (ChartsPlus)
- - DB (SQL OEM Bundled Package)

Add-On Options:

- RT – Electrical metering information and power quality
- 3PX - 3rd Party Connectivity (OPC)
- RPT - Advanced Reports
- CHT - Advanced Charts
- DB - SQL2000 Package

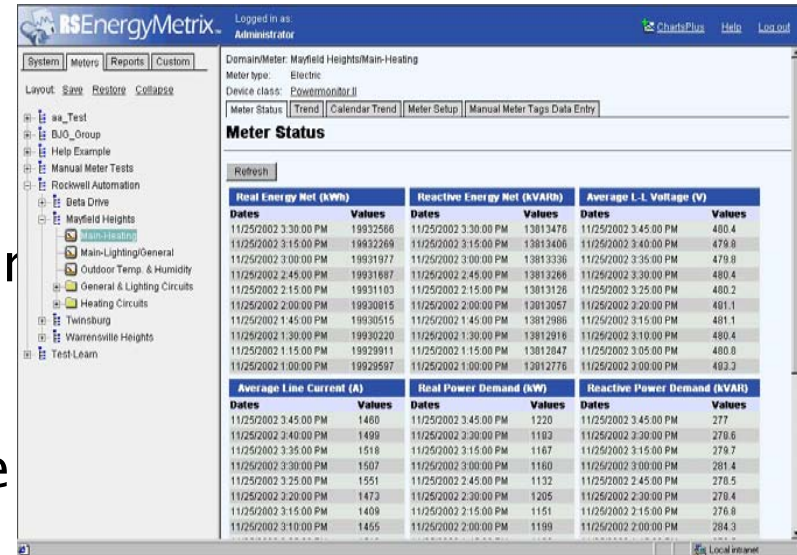
All options are in conjunction with Manager



RSEnergyMatrix Software Suite

RSEnergyMatrix Manager – Base Package

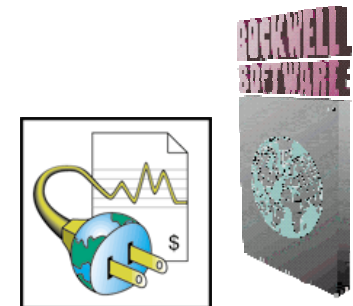
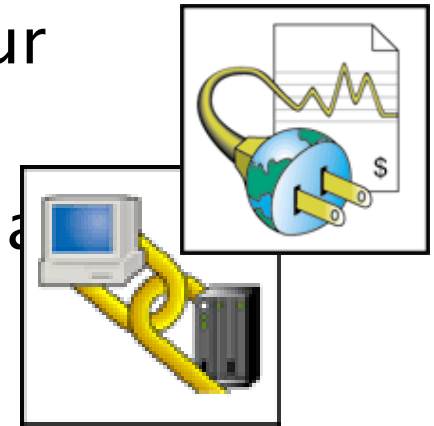
- Core data logging, reporting, charting and billing package.
- Connects to Allen–Bradley power monitors and programmable controllers.
- Connects to 3rd party hardware via communications gateways
- Server–based, web–enabled application that runs on a Windows 2000/2003 Server.
- Microsoft Internet Explorer is the client used to access and configure Manager.
- Available with 8, 64 or 10,000 meters' Licenses.



RSEnergyMetrix Manager

Connectivity

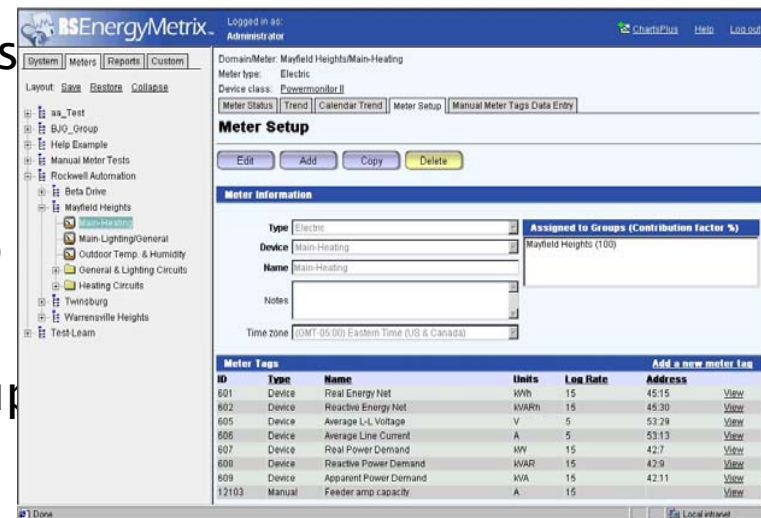
- Connect to metering points right from your desktop PC.
- Connect to Allen–Bradley power monitors and programmable controllers.
- Connectivity through RSLinx: Ethernet, Ethernet IP, DeviceNet, ControlNet, RIO pass–thru (RSLinx Lite is included with Manager).
- Optional third party device connectivity via OPC with 3PX option.



RSEnergyMetrix Manager

Configuration

- RSEnergyMetrix provides easy and flexible configuration
- Configure electricity, gas, water, and steam meters or any energy or production related inputs.
- Manual Meters allow you to include legacy meter data in the database.
- Configure user defined data sources such as standard PLC-5 or SLC hardware types or Generic OPC.
- Flexible configuration allows you to create a model of your enterprise:
 - Name devices, meters and groups
 - Create sub-groups
 - Share meters among groups for cost allocation
- Set and change meter configuration values remotely.
- Multi-level password protection and privileges.



The screenshot displays the RSEnergyMetrix Manager web interface. The top navigation bar includes 'System', 'Meters', 'Reports', and 'Custom'. The main content area is titled 'Meter Setup' and shows configuration details for a meter named 'Main-Heating'. The 'Meter Information' section includes fields for Type (Electric), Device (Main-Heating), Name (Main-Heating), and Time zone (GMT-05:00 Eastern Time (US & Canada)). A table below lists various meter tags with columns for ID, Type, Name, Units, Lon Rate, and Address.

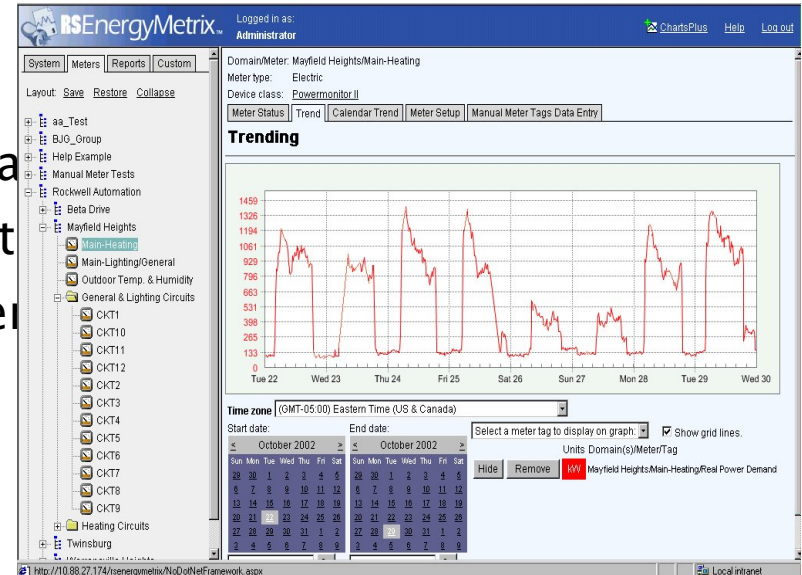
ID	Type	Name	Units	Lon Rate	Address
601	Device	Real Energy Net	kWh	15	45:15
602	Device	Reactive Energy Net	kVARh	15	45:30
605	Device	Average L-L Voltage	V	5	53:29
606	Device	Average Line Current	A	5	53:13
607	Device	Real Power Demand	MW	15	42:7
608	Device	Reactive Power Demand	kVAR	15	42:9
609	Device	Apparent Power Demand	kVA	15	42:11
12103	Manual	Feeder amp capacity	A	15	



RSEnergyMetrix Manager

Monitoring and Analysis

- Log usage, demand and production data
- Create historical trend reports and charts
- Establish consumption baseline and use defined time of use periods.
- Create custom rate plans using the rate plan menu and line item scripting.
- Assign rate plans to meters or groups of meters.
- Import and export rate schedules in XML format.
- Create and print daily or monthly cost and billing reports By:
 - Meter
 - Business group
 - Department
 - Site
- Create energy budgets and forecasts.
- Compare and contrast alternative utility rates; do “what-if” for other rate structures.



RSEnergyMetrix Manager

Reports

- **Consumption**

- Reports consumption values (kWh, kVarh, etc) for selected meter(s) or group(s) for a specified date/time range

- **Demand Analysis**

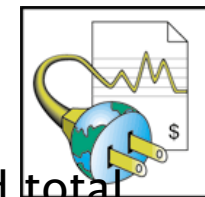
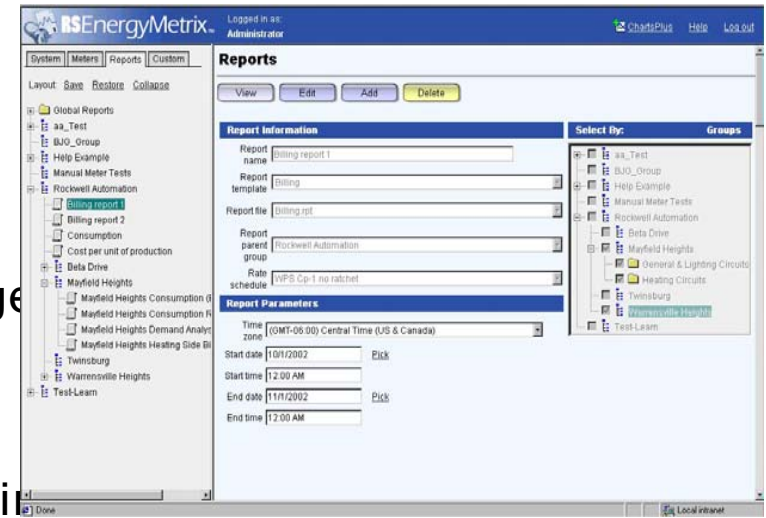
- Reports kW demand values for selected meter(s) or group(s) for a specified date/time range.
- Reports "worst case scenario" peak demand that would have occurred if each meter or group's peak demand had occurred in the same demand interval.

- **Billing**

- Runs billing reports for selected meters for a specified date/time range.
- The report outputs a list of line items and a total charge amount.
- Each line item consists of a description, quantity, rate and charge.

- **Cost Allocation**

- Runs a two dimensional array of line items and charges for selected meters or groups, along with subtotals and a grand total.



Sample Report

Rockwell Automation - Mayfield Heights
Power Monitoring System



Mayfield Heights Heating Side Billing

Starting date and time: 9/1/2002 12:00:00 AM
Ending date and time: 10/1/2002 12:00:00 AM

Rate schedule: Taiwan Power Company

Total Charge: \$2,521,308.35

Energy Charges

Description	Quantity	Rate	Charge
Energy Non-summer On-peak	131,160.0 kWh	1.95	\$255,762.00
Energy Non-summer Off-peak	591,042.0 kWh	1.95	\$1,152,531.90
Energy Summer Off-peak	9,877.0 kWh	1.95	\$19,260.15
Energy Summer On-peak	0.0 kWh	1.95	\$0.00

Demand Charges

Description	Quantity	Rate	Charge
Contracted Demand - Non-summer	6,080.3 kW	153	\$930,291.00
Contracted Demand - Summer	209.7 kW	207	\$43,401.00

Adjustments

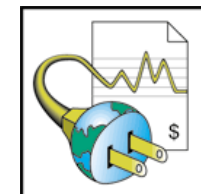
Description	Quantity	Rate	Charge
Power Factor Adjustment	0.0 pct	0.0015	\$0.00

Demand Charges

Description	Quantity	Rate	Charge
Excess Demand Charge - Summer	0.0 kW	207	\$0.00
Excess Demand Charge - Non-Summer	0.0 kW	153	\$0.00

Taxes and Fees

Description	Quantity	Rate	Charge
Sales Tax	2,401,246.0 \$	0.05	\$120,062.30



RSEnergyMetrix Manager

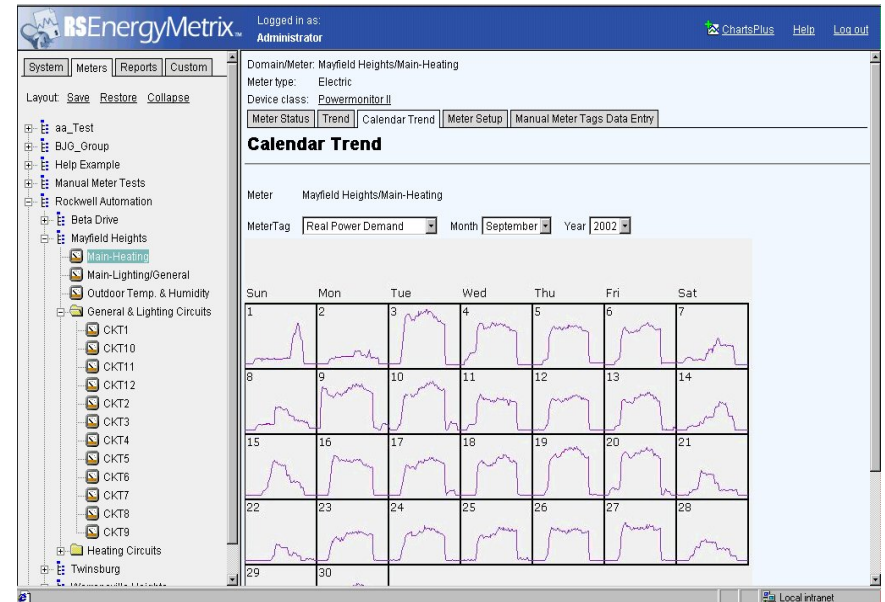
Charts

- **Trend**

- Plots up to 5 selected variables (Current, KW Demand etc) on a web page.
- All variables are plotted with the same selected time axis.

- **Calendar Trend**

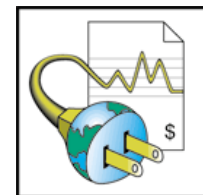
- Plots 1 variable overlaid on a monthly calendar.
- Clicking on a date on the calendar displays a larger graph of that variable on that date.
- Multiple dates may be overlaid on that graph for analysis and comparison.



RSEnergyMetrix Manager

Alarms

- RSEnergyMetrix generates alarms triggered by system anomalies, power quality event or in response to user predefined conditions.
 - Workstation alarms
 - E-mail alarms
 - Pager Alphanumeric alarms



RSEnergyMatrix Manager

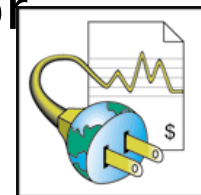
Web HMI

- Clients only need standard IE web browser (Version 6.0)
- Configure, view and analyze all energy information:
 - Real time data, trends and alarms
 - Reports and charts



Printing and Storing Data

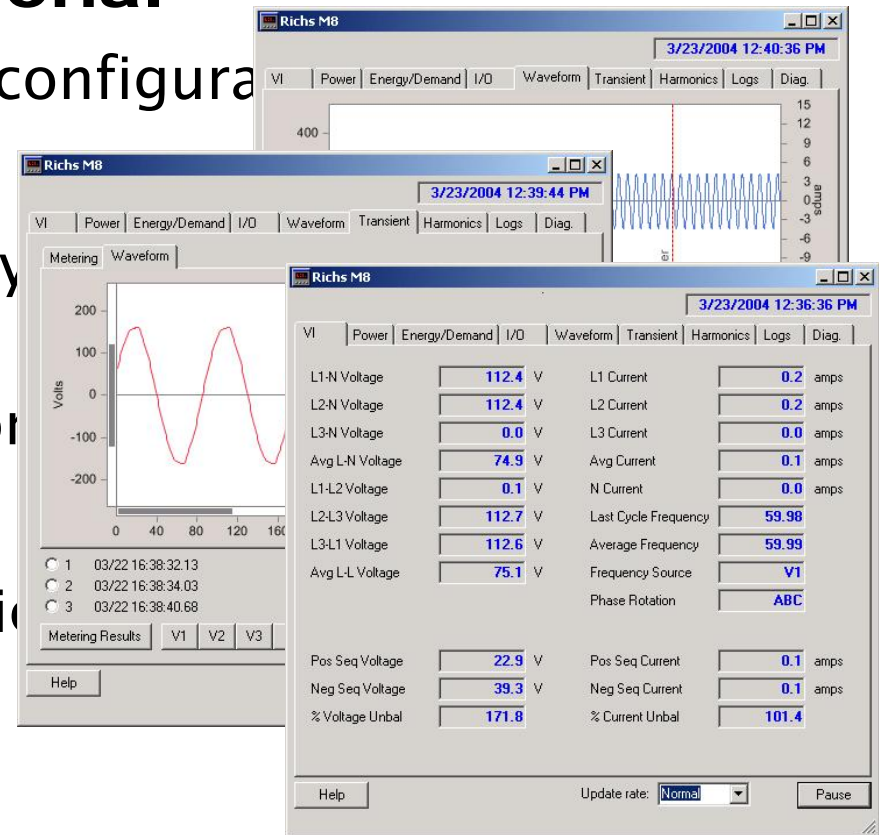
- Print all reports and charts
- Store reports and charts in various formats (pdf, excel, word, tiff, etc...) to be stored in a folder or sent by e-mail



RSEnergyMetrix Software Suite

RSEnergyMetrix RT – Optional

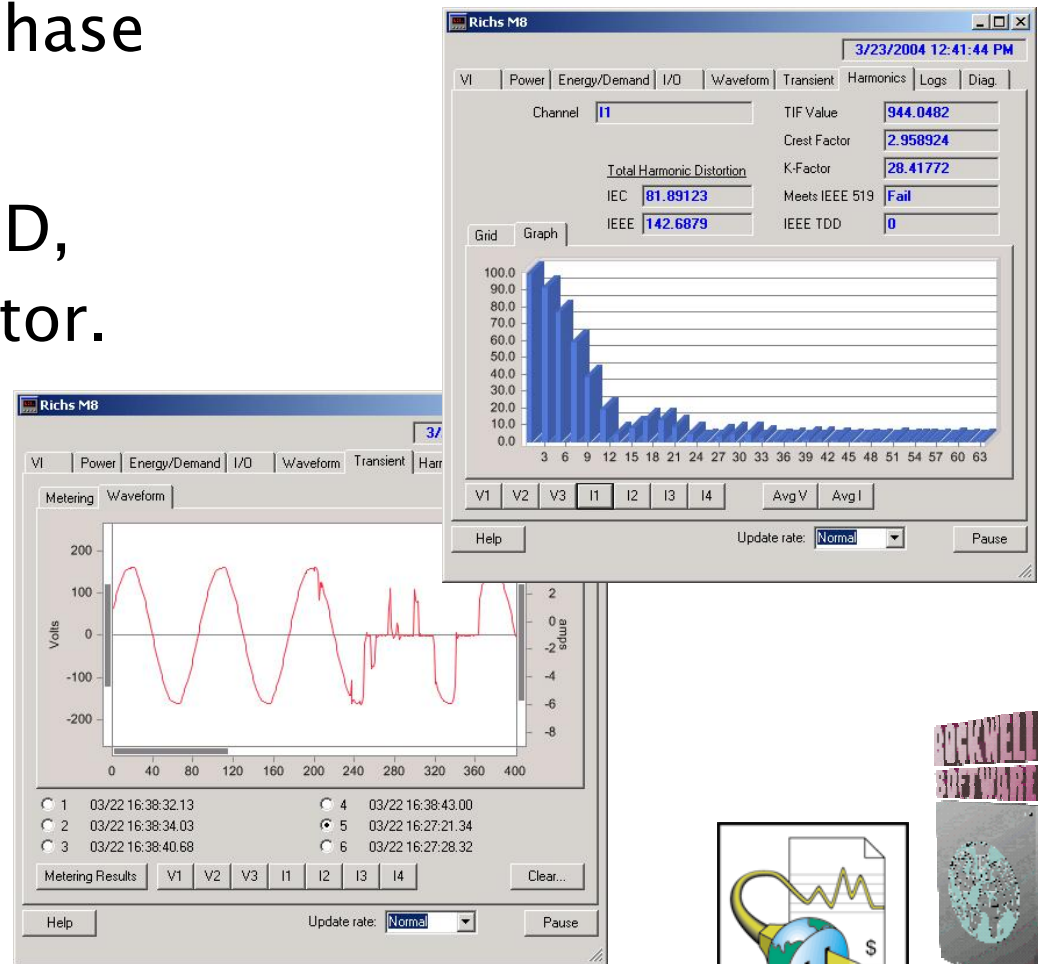
- The real-time communications, configuration and data display package.
- Configure and view Allen-Bradley power monitors data including real-time and historical data stored within the monitors.
- Display wave forms and harmonics in graphical or log formats.
- Available with RSEnergyMetrix Manager



RSEnergyMetrix Features

RSEnergyMetrix RT – Optional

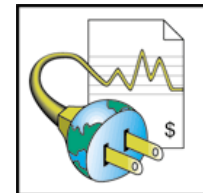
- Capture and overlay power quality events to correlate phase to phase relationships.
- Display Harmonics. THD, K-factor and Crest Factor.
- Plot Transients, Sags and Swells on ITI (CBEMA Curves)



RSEnergyMatrix Software Suite

RSEnergyMatrix 3PX – Optional

- 3rd party connectivity option package.
- Provides 3rd party connectivity to other devices through a customer supplied OPC server.
- Available with 8, 64 or 10,000 meters' Licenses.



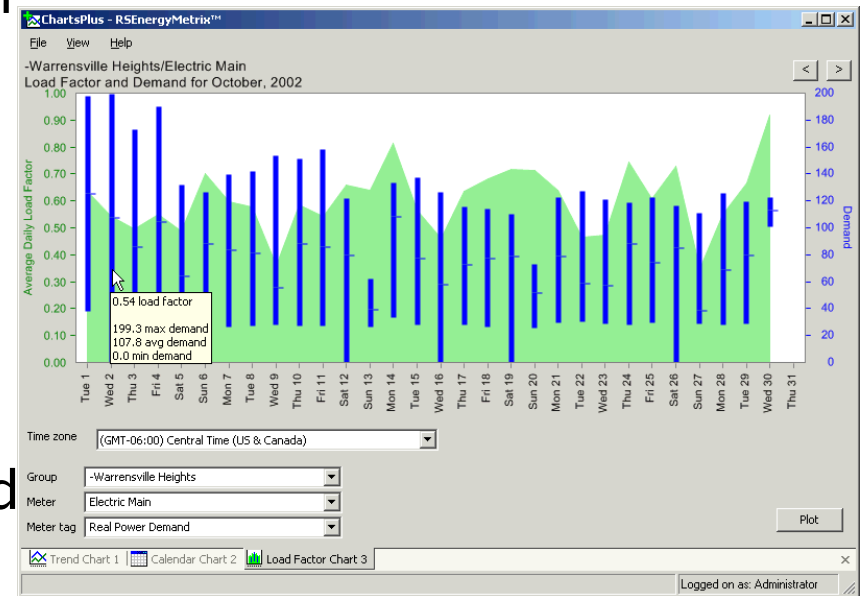
RSEnergyMatrix Software Suite

RSEnergyMatrix ChartsPlus – Optional

- Additional charts option package that goes beyond the standard charts offered in Manager
- Provides flexible tools to create custom charts.

- Sample Charts:

- Enhanced Trending
- Enhanced Calendar Trends
- Monthly Consumption/Demand Comparison



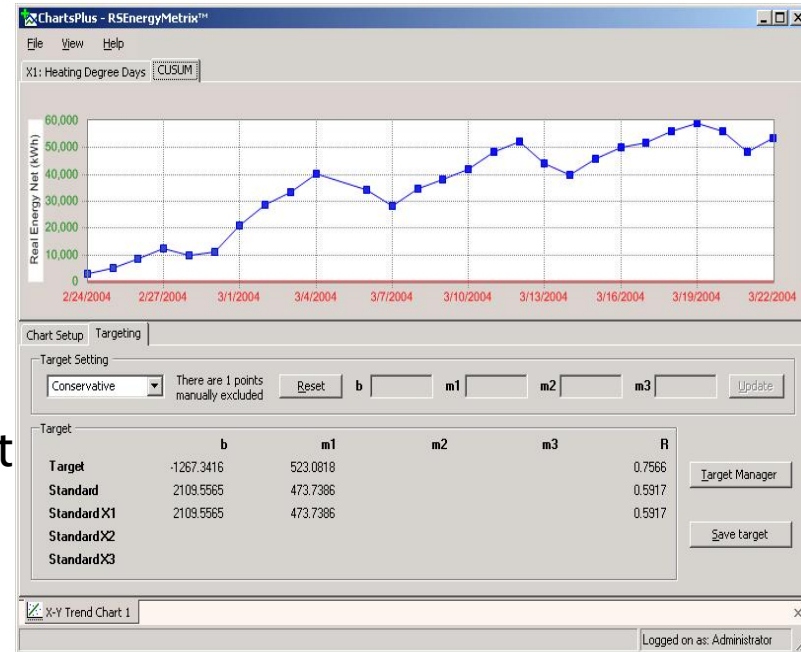
- Offers powerful X-Y trend, Targeting and CUSUM Tools to predict and correlate energy related variables (i.e. Demand Vs. Temperature)



RSEnergyMetrix Software Suite

X-Y Trend, Targeting and CUSUM Analysis

- Part of the Charts Plus package
- Powerful energy benchmarking, forecasting and analysis tools
- Use linear regression methods to identify energy saving opportunities and compare data set to a user selected target lines.
 - Select among four types of target
 - Conservative
 - Aggressive
 - All data
 - Manual



- CUSUM Analysis: The CUSUM chart displays the CUMulative SUM of the deviation between actual and target variable in successive intervals. CUSUM analysis pinpoints changes in process behavior that cost energy dollars.



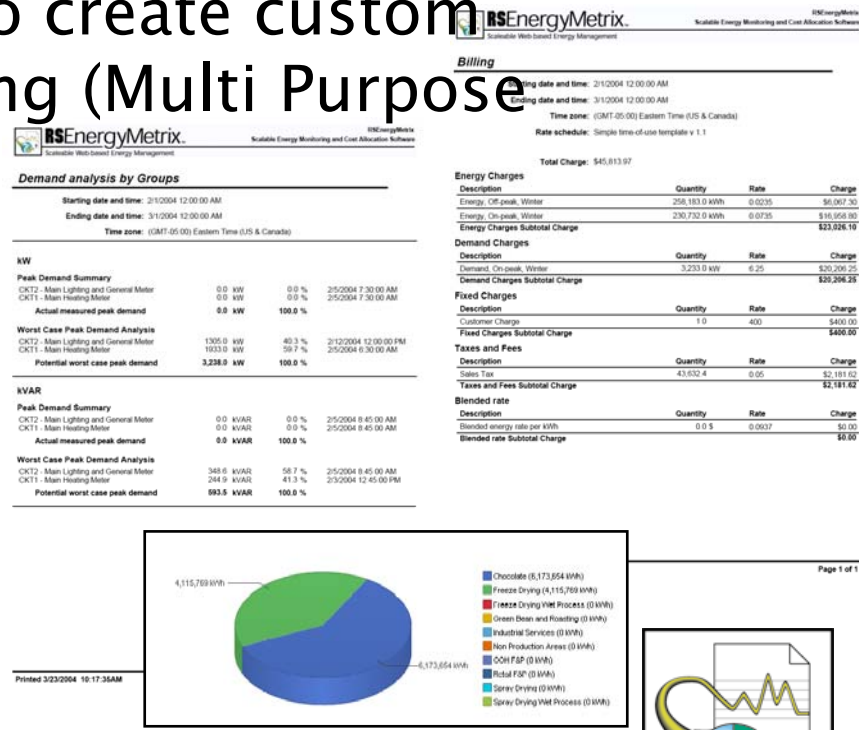
RSEnergyMatrix Software Suite

RSEnergyMatrix ReportsPlus – Optional

- Additional reports option package that goes beyond the standard reports offered in Manager.
- Provides flexible tools to create custom reports using VB scripting (Multi Purpose Report)

• Sample reports:

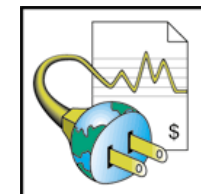
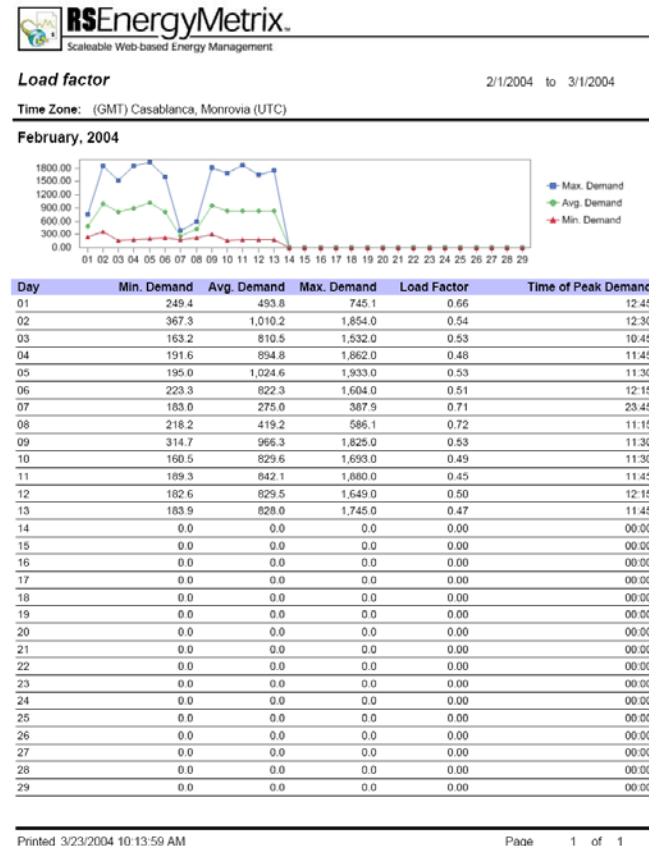
- Energy Correlation
- Efficiency
- Comparative Billing
- Billing Roll-Up



RSEnergyMatrix Software Suite

Multi Purpose Report (MPR)

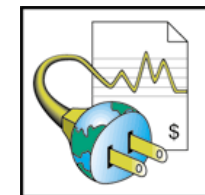
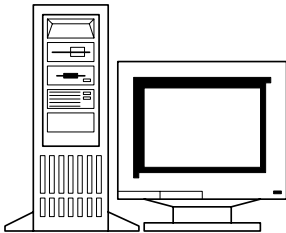
- Part of the ReportsPlus package
- Powerful report customization tool
- Provides the flexibility to change the output of energy reports including:
 - Page Header and Footer
 - Text Information and Properties
 - Grids and Tabular Information
 - Trend Charts
 - Pie Charts
- Driven by Visual Basic for .NET scripting
- Supports a free-form type of report output
- Scripts can be stored and reused



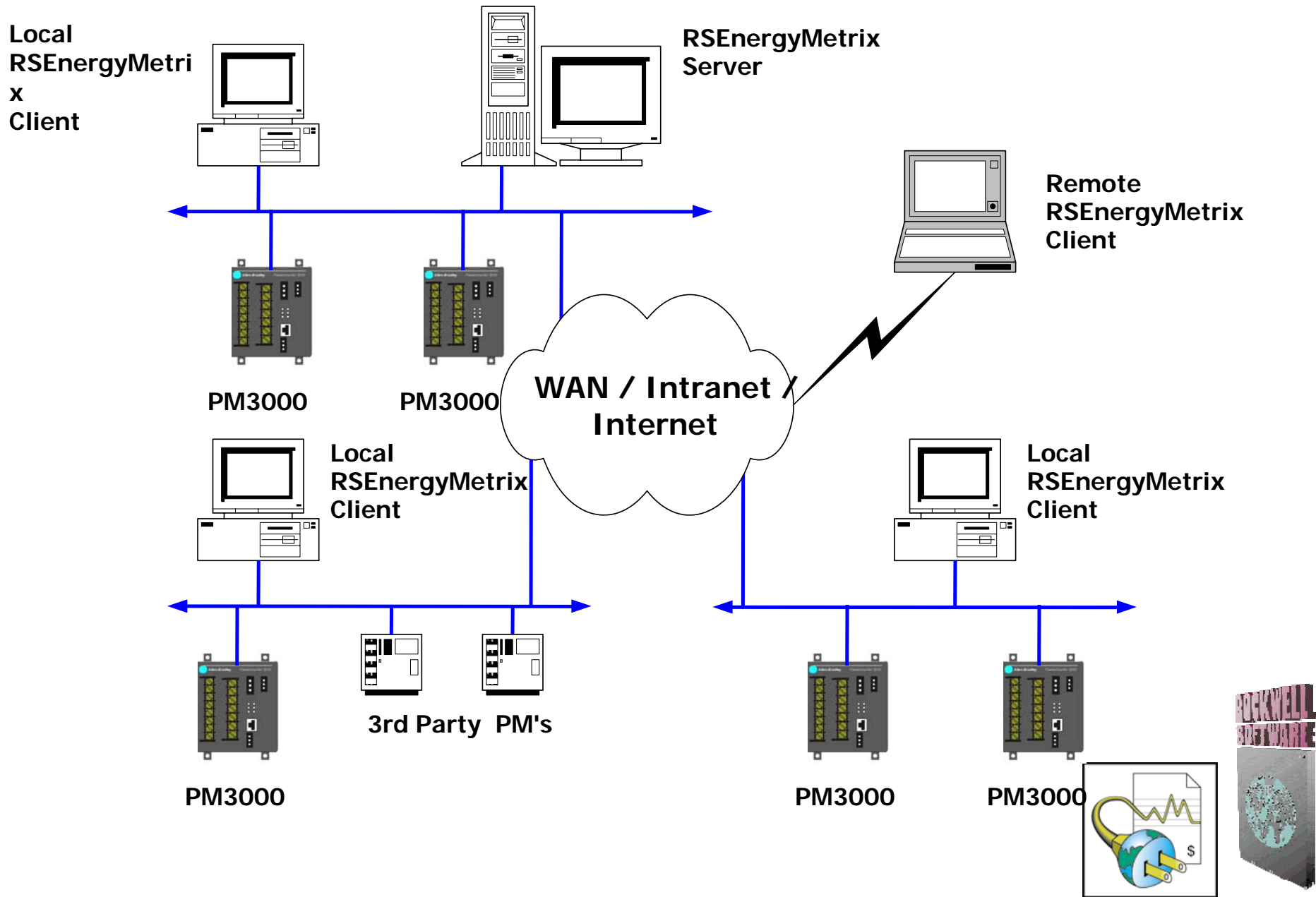
RSEnergyMatrix Software Suite

RSEnergyMatrix DB – Optional

- RSEnergyMatrix is offered in a bundled package with Microsoft SQL Server Standard 2000.
- Options:
 - Unlimited clients (1 processor License).
 - Per client (CAL) license.

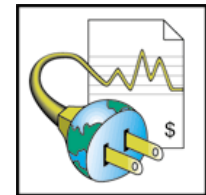


RSEnergyMatrix Software Architecture



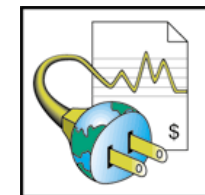
Resources available to you

- RSEnergyMetrix Demo CD (1400-DM001A-EN-P)
- RSEnergyMetrix web site demo (Copy of the software that includes Hands-On-Lab with instructions)
(www.rseenergymetrix.com)



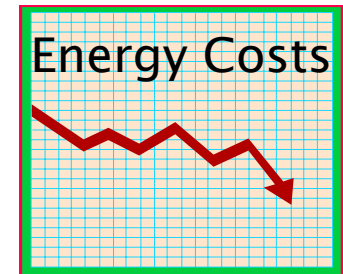
Min System Requirements

- 1.5 GHz processor with 1024M ECC RDRAM memory, 36GB Ultra 160/M SCSI hard drive, 20/48 IDE CD-ROM, 16X/10X/40X CD RW Drive, 3.5 in floppy, 3COM 10/100 Ethernet network card, RIO network card and a 17" monitor.



The RSEnergyMetrix Advantage

- Energy Information at your fingertips
- State of the Art Technology
- Affordable
- Scalable
- Web Enabled
- Easy to use
- Backed by Rockwell Software Quality



most global provider
Valued
of power, control & information solutions

