



# PME 8.0 Reporting

What's new in PME 8.0

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## Responsibilities

- Power Monitoring Expert
- PowerSCADA Expert
- Segment Software Solutions
- Managed Services (support, training, other)

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# PME Report Engine Overview

- PME report engine allows you to consolidate complex data from multiple devices (physical or virtual) or from hierarchy nodes from all around your facility into comprehensive easy-to-understand graphical reports
  - Simple web user configuration to set up reports
  - Ability to automate reports to be delivered on schedule or event
  - Deliver via Email, shared folder or printer
  - Output formats: Excel, PDF, HTML or XML
  - 22 default report templates





# Advanced Features


- Here are some of the most advanced features of PME report engine:
  - Rollover detection
  - Intervalization of cumulative measurements (including WAGES)
  - Data aggregation via Hierarchies
  - Measurement equivalency (smart mode measurements)
  - Definition of custom date ranges and formula based custom ranges
  - Flexible rate engine for energy billing cost allocation or bill verification applications
  - Report Development Toolkit (RDK 2.0) Develop custom reports with no need for C# programming.


# Default Report Modules in PME 8.0

Included by default on all PME 8.0 systems

General	
	<ul style="list-style-type: none"><li>• 100ms Report</li><li>• Data Export Report</li><li>• Event History Report</li><li>• System Configuration Report</li><li>• Tabular Report</li></ul>


Energy Management	
	<ul style="list-style-type: none"><li>• Energy Cost Report</li><li>• Energy Period over Period Report</li><li>• Energy Usage by Shift Report</li><li>• Load Profile Report</li></ul>

Power Quality	
	<ul style="list-style-type: none"><li>• EN50160:2000 Mains Signaling Report</li><li>• EN50160:2000 Report</li><li>• EN50160:2010 Mains Signaling Report</li><li>• EN50160:2010 Report</li><li>• Harmonic Compliance Report</li><li>• IEC61000-4-30 Report</li><li>• Power Quality Report</li></ul>

Usage Trending	
	<ul style="list-style-type: none"><li>• Hourly Usage Report</li><li>• Multi Device Usage Report</li><li>• Single Device Usage Report</li><li>• Trend Report</li><li>• Multiple Trend</li></ul>


# General Reports

- 100ms Report
  - Summarizes 100ms measurements from Power Logic Circuit Monitors for applications such as preventive maintenance: acquisition of a motor startup curve, etc
- Data Export Report
  - Extract large amounts of historical data from your PME system into a CSV file
- Event History Report
  - Create a report of events or alarms that have occurred in the system
- System Configuration Report
  - Allows the user to display a high-level inventory of their system with key information
- Tabular Report
  - Compare multiple devices and multiple measurements across defined time ranges

General	
	<ul style="list-style-type: none"><li>• 100ms Report</li><li>• Data Export Report</li><li>• Event History Report</li><li>• System Configuration Report</li><li>• Tabular Report</li></ul>


# Power Quality Reports

- EN50160 2000/2010
  - European standard that defines the voltage characteristics of the electricity supplied by public distribution systems
- Harmonics Compliance Report
  - Makes sure harmonic distortion levels for voltage and current in your facility are within compliance in order to minimize interference with electrical equipment (Default levels in accordance to IEEE519)
- IEC61000-4-30 Report
  - Create a report of events or alarms that have occurred in the system
- Power Quality Report
  - Allows the user to display a high-level inventory of their system with key information

Power Quality	
	<ul style="list-style-type: none"><li>• EN50160:2000 Mains Signaling Report</li><li>• EN50160:2000 Report</li><li>• EN50160:2010 Mains Signaling Report</li><li>• EN50160:2010 Report</li><li>• Harmonic Compliance Report</li><li>• IEC61000-4-30 Report</li><li>• Power Quality Report</li></ul>

# Energy Management Reports


- **Energy Cost Report**
  - Used to report on energy consumption and peak demand levels over a period of time, categorized by time of use. The Energy Cost report definition uses energy and demand measurements.
- **Energy Period over Period Report**
  - Compare energy consumption between two time ranges for aggregation intervals (daily, weekly, monthly, yearly)
  - For example “This week vs. same week last year”
- **Energy Usage by Shift Report**
  - Compare energy consumption from one shift to other shifts. See an individual device breakdown for each shift as well as an overall total
- **Load Profile Report**
  - See an individual device breakdown for each shift as well as an overall total (Highlights peak loads on graphs)

Energy Management	
	<ul style="list-style-type: none"><li>• Energy Cost Report</li><li>• Energy Period over Period Report</li><li>• Energy Usage by Shift Report</li><li>• Load Profile Report</li></ul>




# Usage Trending Reports


- Hourly Usage Report
  - produces a tabular display of usage of various types of quantities (such as consumption of Water, Natural Gas, etc.) per hour for a specific day
- Multi Device Usage Report
  - Used to view consumption information for multiple devices. View energy usage for single period, or compare two periods, for example, this month versus last month.
- Single Device Usage Report
  - Used to view energy information for one device. View energy usage for a single period, or compare two periods, for example, this month versus last month
- Trend Report
  - Used to create a report that displays trend information in a line, column, bar, or pie chart. You choose devices and measurements for a selected period of time
- Multiple Trend Report
  - enables two source/measurements, two 'Y' axes to help enable applications such as PF Correction and Energy consumption vs. temperature


Usage Trending	
	<ul style="list-style-type: none"><li>• Hourly Usage Report</li><li>• Multi Device Usage Report</li><li>• Single Device Usage Report</li><li>• Trend Report</li><li>• Multiple Trend</li></ul>


# Advanced Report Modules in PME 8.0


These are optional (paid) modules

Advanced Energy Awareness	
	<ul style="list-style-type: none"><li>• Consumption Ranking</li><li>• Energy Comparison</li><li>• Energy Usage (for Dashboard KPI's)</li><li>• Energy Usage by TOU</li></ul>

UPS Performance	
	<ul style="list-style-type: none"><li>• UPS Monitoring and Testing Report</li><li>• UPS auto-test Report</li><li>• UPS Battery Health Report</li></ul>

Energy Analysis	
	<ul style="list-style-type: none"><li>• Calendar Load Profile (week, Month)</li><li>• Duration Curve</li><li>• Scattered Plot (XY Regression)</li></ul>


Breaker Performance	
	<ul style="list-style-type: none"><li>• LV Breaker Aging Report</li></ul>

Energy Billing	
	<ul style="list-style-type: none"><li>• Billing Report</li><li>• Billing Summary Report</li><li>• Multiple Billing Report</li><li>• Multiple Billing Export Report</li><li>• Rate Editor</li></ul>

# Advanced Energy Awareness Module

Raise energy awareness to achieve conservation goals with enhanced dashboard and reporting capabilities


- Consumption Ranking Report
  - Quickly build energy awareness through relative visualization
  - Create competitive environment with dynamic rankings
  - Normalize consumption data by a static scalar to facilitate fairer comparisons
- Energy Comparison Report
  - Used to compare energy usage by load type, area, building, facility etc. with the ability to normalize by a static scalar and convert to common energy units
- Energy Usage Report
  - Displays energy usage data in a variety of display formats (gauges, bar charts, stacked line etc.) which can be used by the web image gadget to host in your dashboards
- Energy Usage by TOU Report
  - View any usage broken down into time of use schedule periods. Bars automatically change colour to highlight exceeding defined limits

Advanced Energy Awareness	
	<ul style="list-style-type: none"><li>• Consumption Ranking</li><li>• Energy Comparison</li><li>• Energy Usage (for Dashboard KPI's)</li><li>• Energy Usage by TOU</li></ul>

# Energy Analysis Module

Conduct energy analyses for improved efficiency with enhanced data analysis capabilities


- **Calendar Load Profile Report**
  - Easy trend interpretation at a glance
  - Identify out of hours usage, Benchmark performance targets, Identify peak and off peak usage patterns, Trend any logged measurement
- **Duration Curve Report**
  - Statistical analysis for reducing peak demand or lowering base load, validating performance characteristics, transformer capacity modelling
  - Duration Curve Direct Plot with configurable limit value for overlay in chart and act as a filter in the data table and selectable % crossing indicator in the chart
- **Scattered Plot (XY Regression) Report**
  - Link energy usage to weather or any other variable using regression analysis. Quickly identify drifts from expectations

Energy Analysis	
	<ul style="list-style-type: none"><li>• Calendar Load Profile (week, Month)</li><li>• Duration Curve</li><li>• Scattered Plot (XY Regression)</li></ul>

# UPS Performance Module


Understand how your UPS is functioning and managed testing before you need to rely on it during a critical outage

- **UPS Monitoring and Testing**
  - Global overview of UPS status/grouping showing whether in emergency mode/auto-test mode. Allows for the automated testing of battery and showing remaining life of the battery
- **UPS auto-test Report**
  - Embedded monthly Battery Auto-test
    - Slow 1 day discharge (Battery stand alone, UPS through Capacitor bank, Voltage comparison according battery brand data sheet)
    - Short discharge up to -25% of the Battery capacity (duration is depending of the connected load)
- **Battery Health Report**
  - Battery signature comparison in any UPS emergency mode status
    - By using the selected reference waveform and any number of previous waveforms, the report can illustrate the changing characteristics of the battery over time.

UPS Performance	
	<ul style="list-style-type: none"><li>• UPS Monitoring and Testing Report</li><li>• UPS auto-test Report</li><li>• UPS Battery Health Report</li></ul>

# Breaker Performance Module


- LV Breaker Aging Report
  - Provides a report that displays aging and wear for all breakers defined in the system and real-time summary screens that display breaker aging and wear parameters by group or equipment.
    - Breaker aging monitoring based on
      - Electrical data
      - Mechanical endurance
      - Environmental condition
  - There is also a VIP framework that can be configured to provide real-time status alarms in the vista diagrams

Breaker Performance	
	<ul style="list-style-type: none"><li>• LV Breaker Aging Report</li></ul>

# Energy Billing Module

Allocate energy costs and share energy billing data and prevent unnecessary utility charges

- **Billing Report**
  - Create accurate energy allocation reports for departments or tenants
  - Verify utility bill is correct with no errors
  - Powerful rate engine supports custom utility rates and charges
  - Configurable line items for flexible report output
  - Supports net metering, meter splitting and common area allocation
  - Supports any energy measurement (WAGES)
- **Billing Summary Report**
  - Aggregate several entities or tenants into a single report
  - Summarize charges to departments or tenants
  - Show the grand total of all entities in the summary
- **Multiple Billing Report**
  - Only one report to configure to produce energy bills for any combination of entities or tenants
- **Multiple Billing Export Report**
  - Automatically save or email tenant billing data
  - Customizable output formats via XML transforms

Energy Billing	
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# Simple Report Customization

- Supports an optional limit/target line in charts
- Support for additional chart types
- Flexible chart options: lock chart at zero, auto-scale Y-axis
- Report elements can be toggled on/off to enable simple report customization
- Support for additional aggregation periods
- Support for hierarchies in more reports

## Hourly Usage Report

<b>Title</b>	<input type="text" value="Hourly Usage Report"/>
<b>Sources</b>	<input type="button" value="Select Sources"/> Main Facility
<b>Measurements</b>	<input type="button" value="Select Measurements"/> Real Energy (kWh)
<b>Reporting Period</b>	<input type="text" value="Last 7 Days"/> [start of day 9/18/2015 to end of day Server Local Time]
<b>Target Line</b>	<input type="text" value="0"/>
<b>Source Label</b>	<input type="text" value="Source Name"/>
<b>Show Data Table</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Show Chart</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Auto-scale Y-Axis</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Include Data Warnings</b>	<input checked="" type="radio"/> Yes <input type="radio"/> No
<b>Report Colors</b>	<input type="text" value="Green"/>



# Advanced Report Customization

- Power user which allows:
  - Support for any data/time range to be selected to better accommodate billing cycles (custom xml)
  - Report logo customization
  - Report colour customization<sup>1</sup>

<sup>1</sup> colours are customized through settings in the database, technical support and/or application engineer support is recommended

# Questions?

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