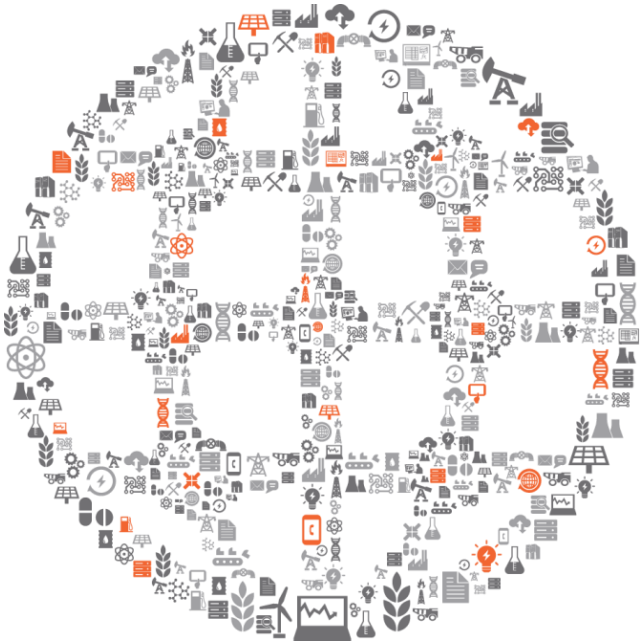

OSIsoft.

REGIONAL SEMINAR

The Power of Data

THRIVING IN A WORLD OF CHANGE

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Gaining and Sharing Insights Across the Enterprise from Anywhere

Presented by **Martin Bryant, Staff Field Service Engineer**

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Data-driven Decisions

A recent **study at MIT** showed that organizations **relying on data** to make decisions **performed** at rates 4-6 % **higher** than their peers.*

**Erik Brynjolfsson, MIT Professor*

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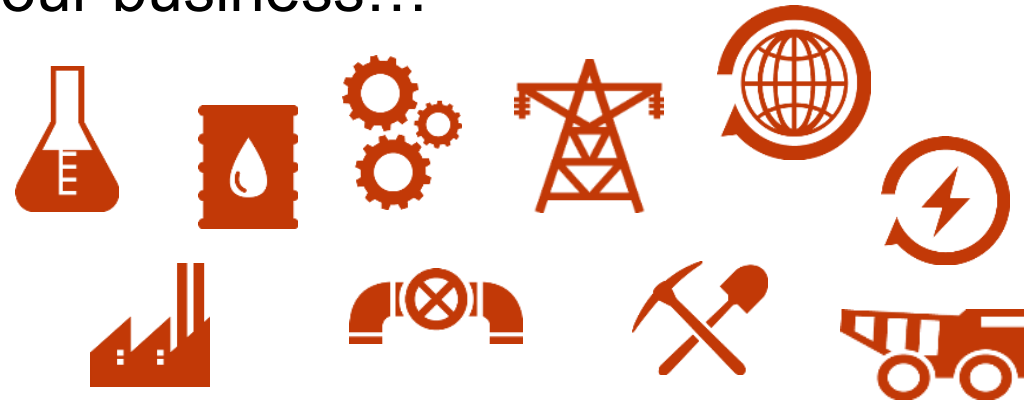
Sharing Insights Across the Enterprise

Operational **insights** are discovered frequently throughout your business…



…but is everyone able to **share** their discoveries **quickly**, **easily** and **effectively**?

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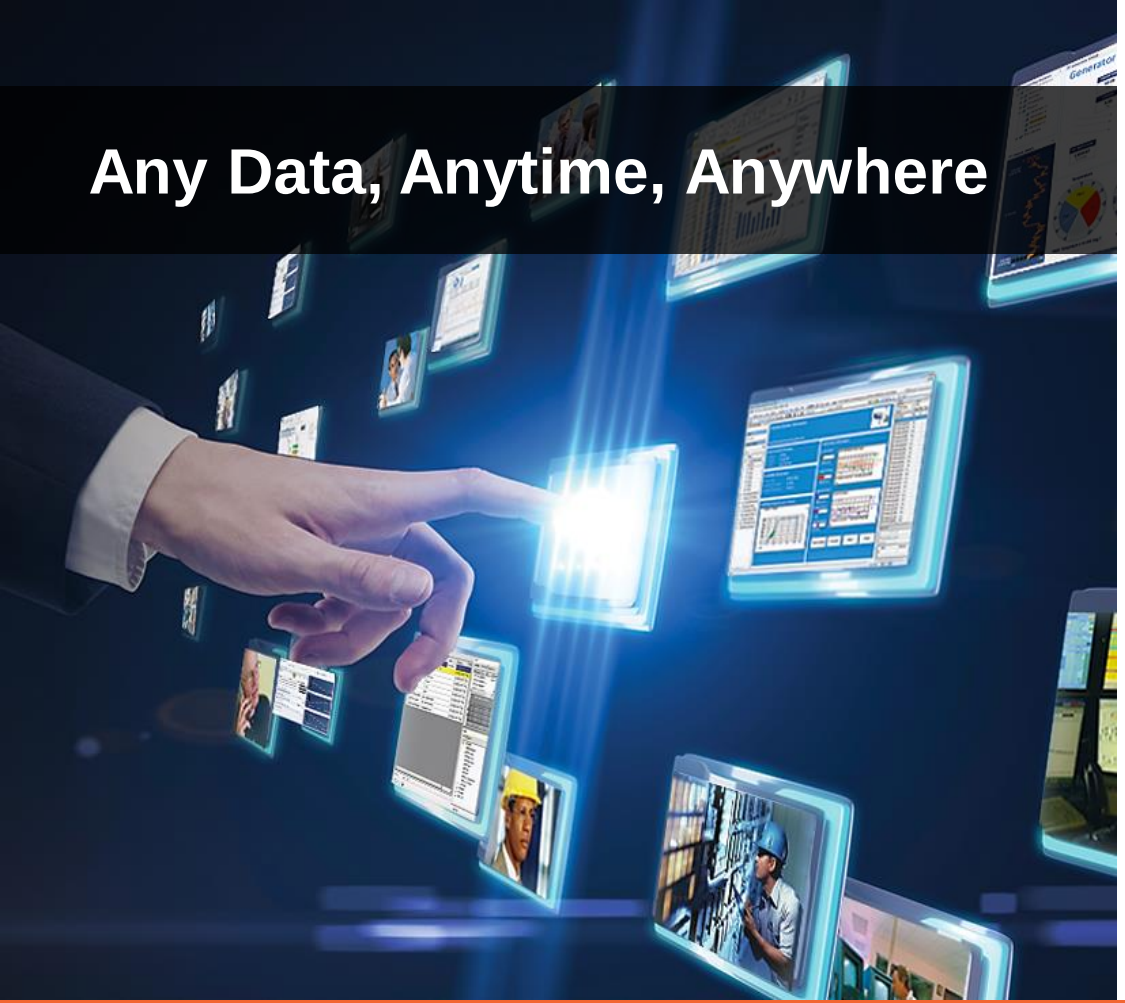

PI Visualization Suite

- Gives **every tool** at your fingertips
- To **fit your needs**
- And facilitate **enterprise-wide collaboration**

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The PI System Client Tools

- **PI Coresight** for ad hoc analysis and collaboration with mobility
- **PI ProcessBook** for display building and monitoring
- **PI DataLink** for analysis and reporting
- **PI WebParts** for enterprise-wide collaboration
- **PI Manual Logger** for manual data collection

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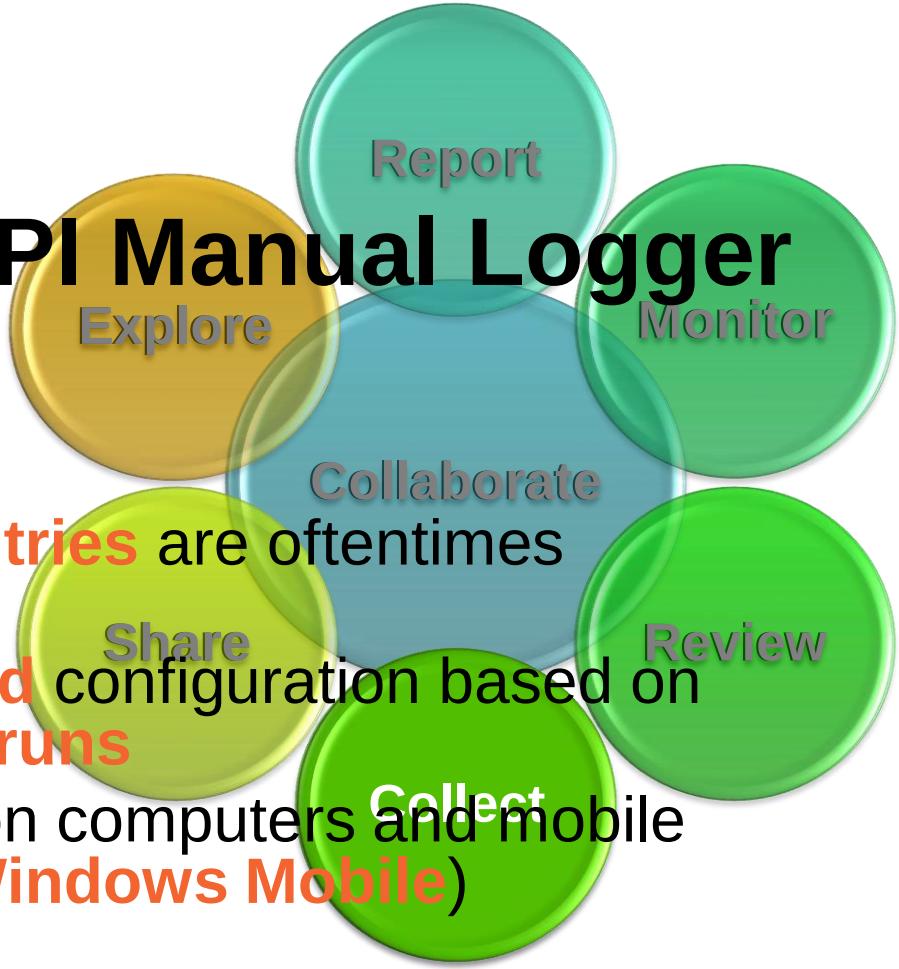
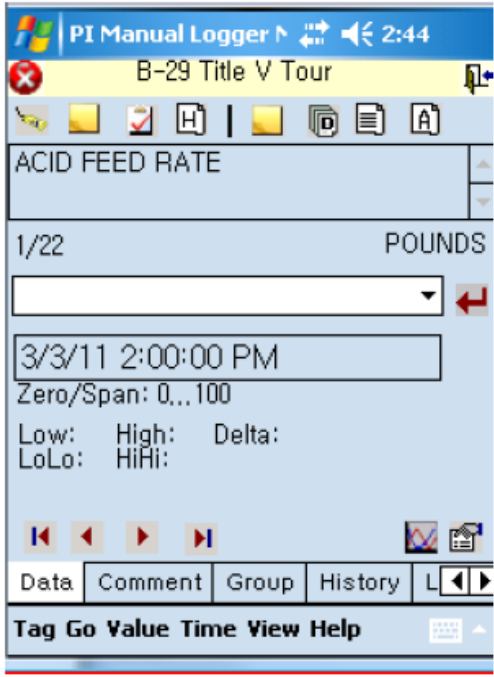
PI Manual Logger



- **Manual entries** are oftentimes crucial
- **Centralized** configuration based on **tours** and **runs**
- Available on computers and mobile devices (**Windows Mobile**)



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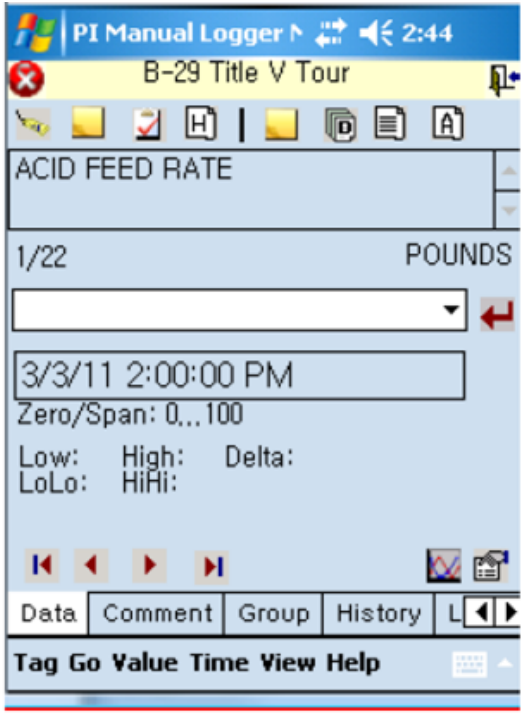
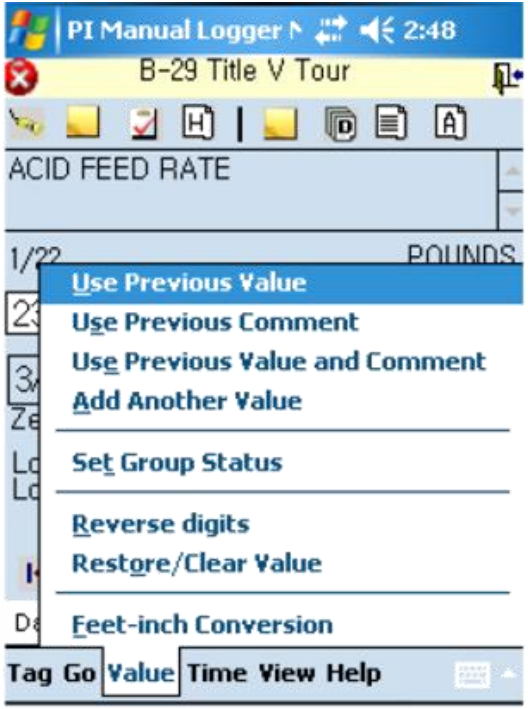
Case Study – Eastman Chemical





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DEMO

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PI Notifications and Visualization Tools

Site\WTG03\Notifications[Low Rotor Speed] generated a new notification event. - Message (HTML)

FILE | MESSAGE

Ignore | Junk | Delete | Reply | Reply All | Forward | Meeting | IM | More | Move to: ? | To Manager | Team Email | Move | Rules | OneNote | Actions | Mark Unread | Categorize | Follow Up | Translate | Find | Related | Select | Zoom

Tue 8/20/2013 2:01 PM

PINotAdmin

Site\WTG03\Notifications[Low Rotor Speed] generated a new notification event.

To Louis-Philippe Page-Morin

Message | Wind Turbines Status.pdi (256 KB)

Low Rotor Speed - WTG03

Trigger Time: 08/20/2013 14:01:00
State: OutsideControl **Priority:** Normal

Attribute	Value	Timestamp
Rotor Speed	2.356rpm	08/20/2013 14:01:00
Wind Speed	6.997m/s	08/20/2013 14:01:00

Instant PI WebParts Trend

Actions:
Acknowledge With Comment

Some People Pane features are turned off because Windows Desktop Search isn't available.

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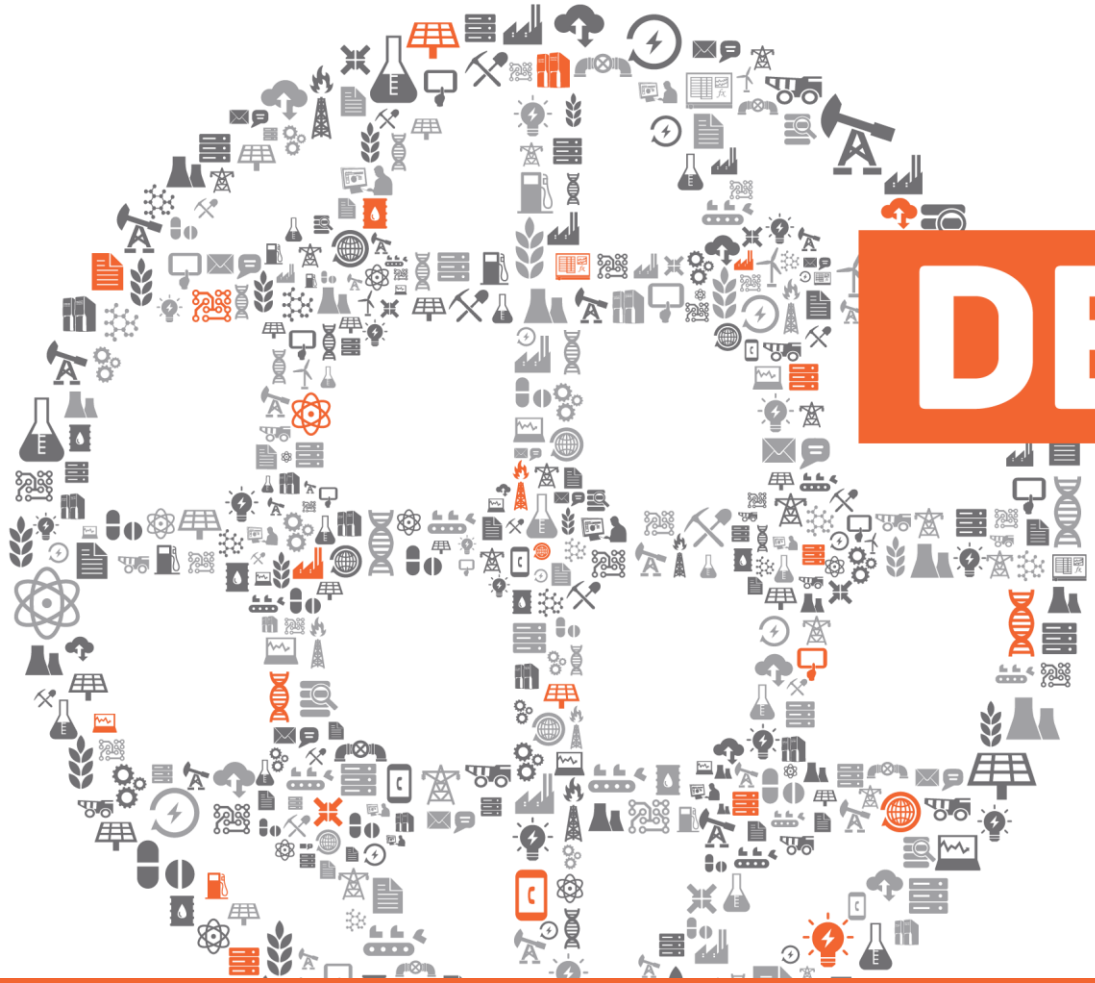

DEMO

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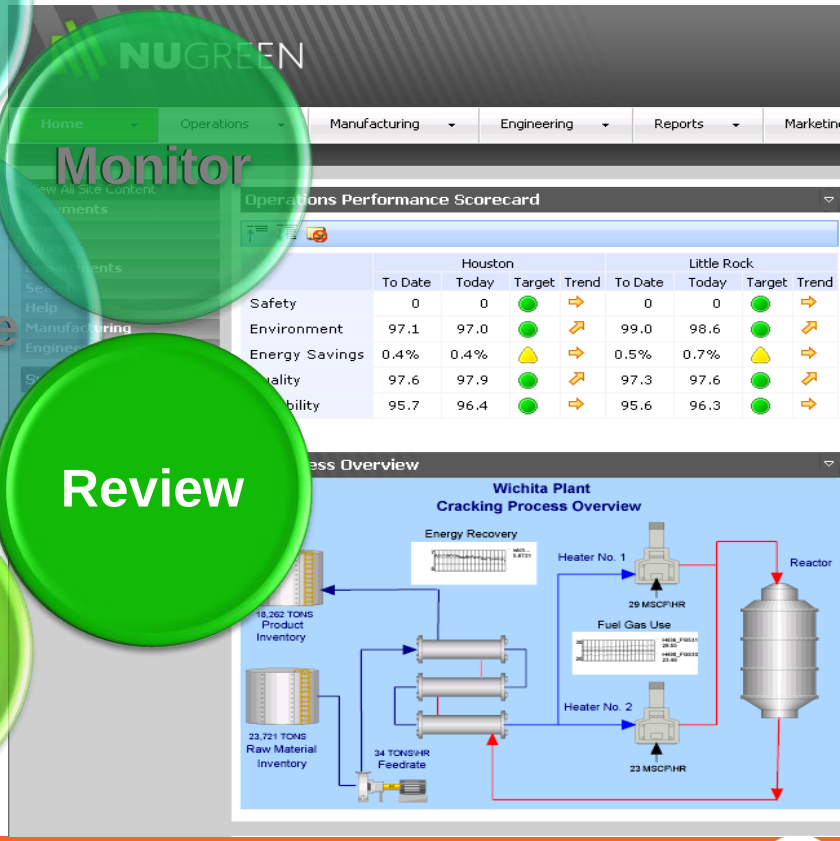
PI WebParts



- Interactive w for Microsoft S
- Allow real-t ization of operational
- Share displays and reports to a wider audience

SharePoint

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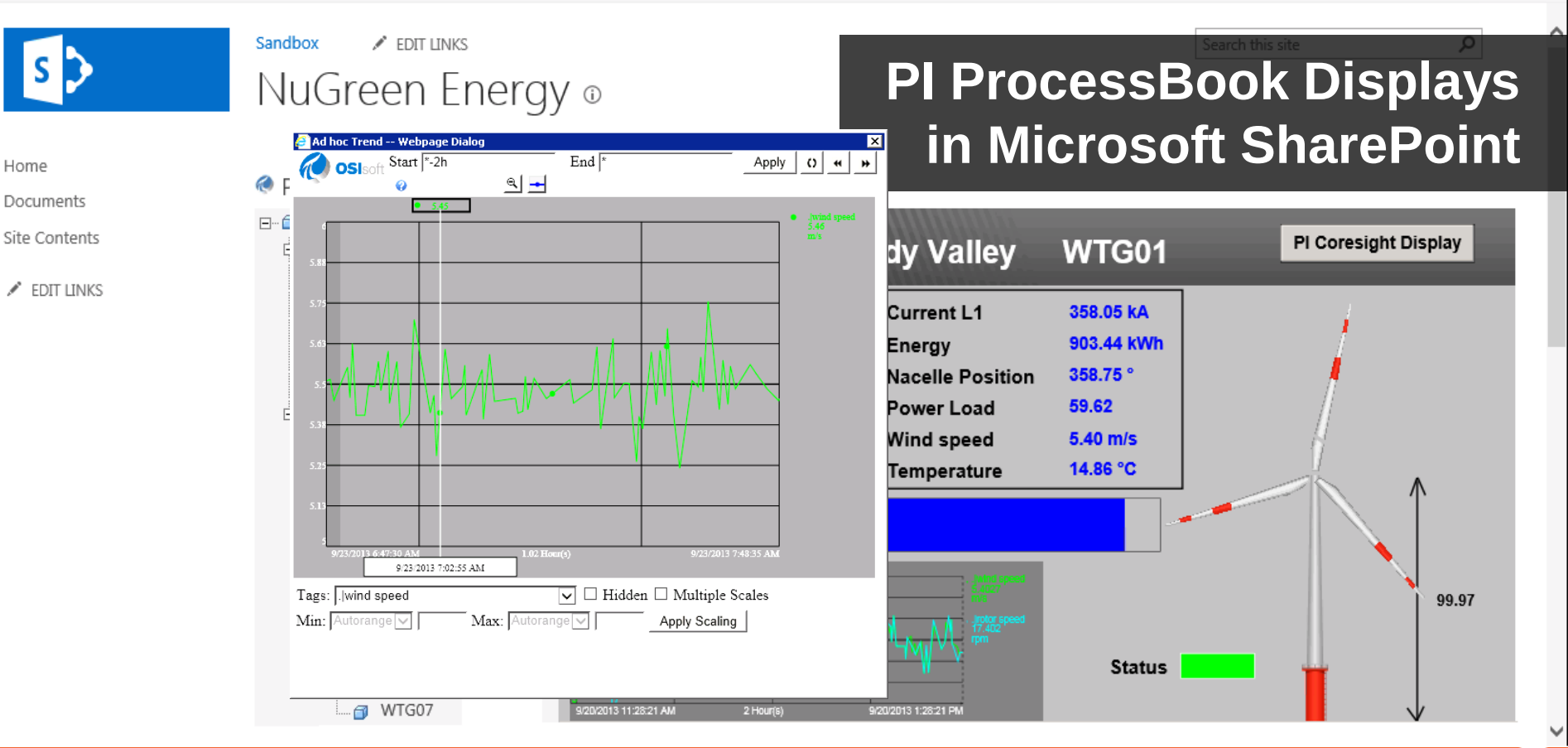
PI ProcessBook Displays in Microsoft SharePoint



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PI DataLink Reports in Microsoft SharePoint

SharePoint | Newsfeed | SkyDrive | Sites | Louis-Philippe Page-Morin

BROWSE | PAGE | SHARE | FOLLOW

Sandbox | EDIT LINKS

NuGreen Energy

- Home
- Documents
- Site Contents
- EDIT LINKS

Excel Web Access - Wind Turbines Daily Report_RS2013_DLES

FILE | OPEN IN EXCEL | DATA | FIND

NUGREEN

Wind Turbines Daily Report

From	Wind Farm		Windy Valley		Wind Turbine	WTG01	
September 22, 2013	Turbine				Environmental Conditions		
To	Model		1.5s		Wind Speed	5.53	m/s
September 23, 2013	Nominal Power		1.5	MW	Outside Temperature		
	Energy	Rotor Speed	Nacelle Position	Current L1	Previous Values		
	kWh	rpm	°	kA	Wind Speed	Outside Temperature	
12:00 AM	905.73	17.50	163.34	360.14	5.42	14.98	
1:00 AM	905.29	17.50	164.28	360.05	5.50	15.03	
2:00 AM	905.70	17.51	144.69	360.13	5.45	15.09	
3:00 AM	906.06	17.51	161.13	360.17	5.40	15.14	
4:00 AM	907.02	17.52	225.30	360.37	5.56	15.20	
5:00 AM	905.36	17.50	158.31	360.07	5.38	15.24	
6:00 AM	906.21	17.51	138.86	360.22	5.50	15.23	

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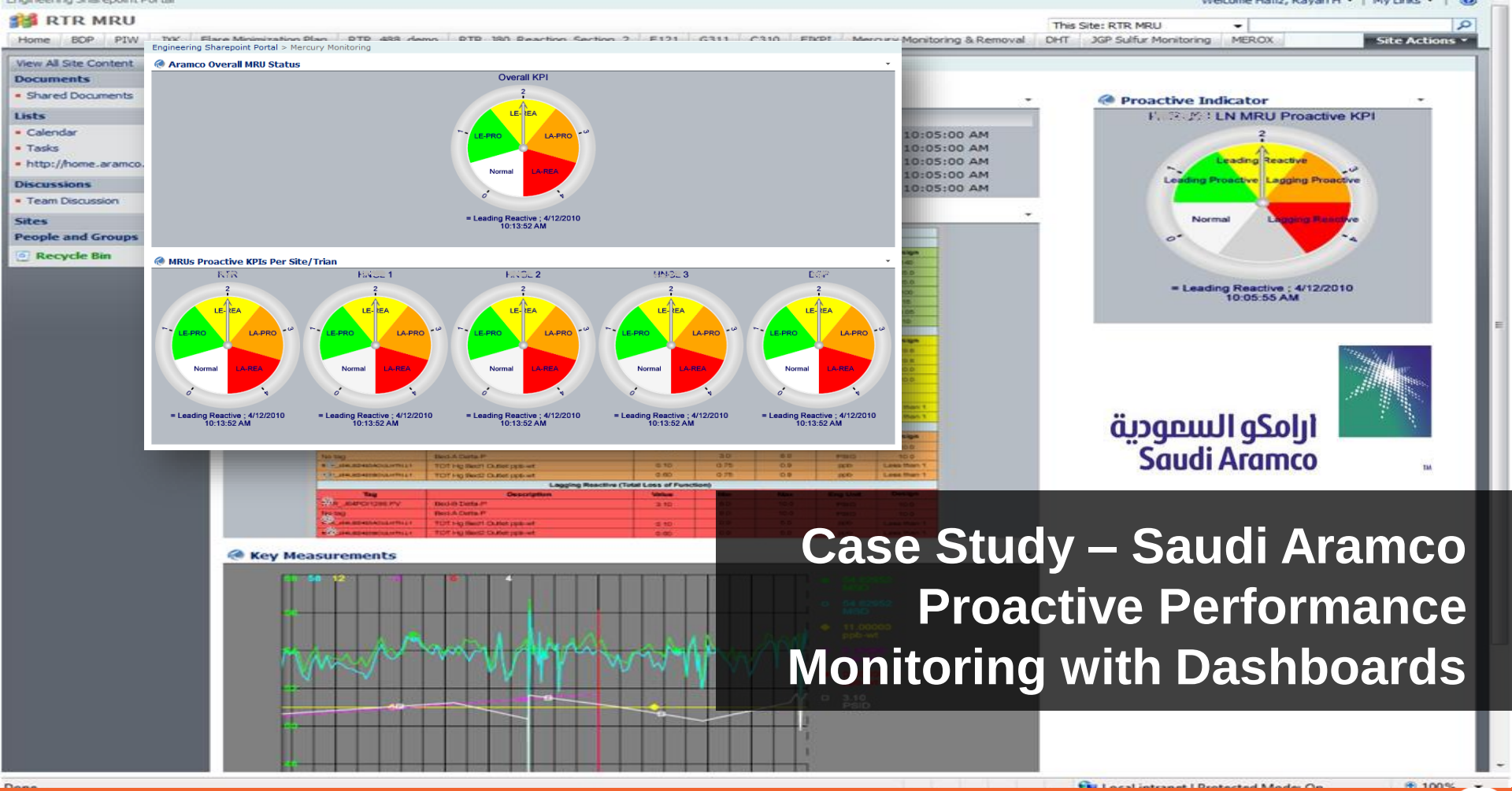

Case Study – Saudi Aramco Proactive Performance Monitoring with Dashboards

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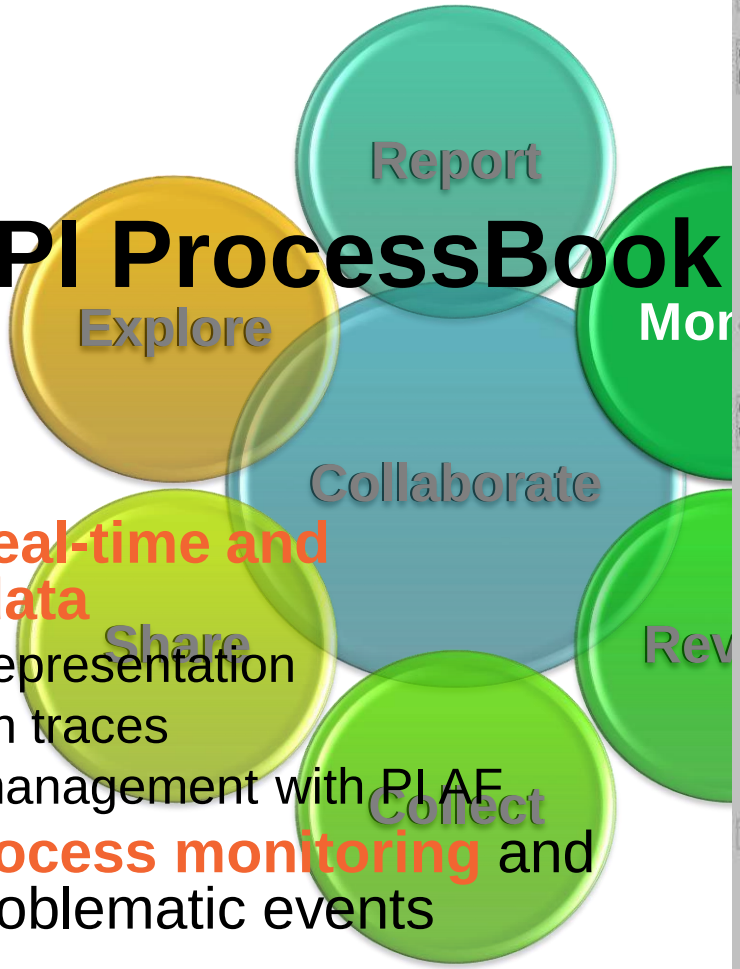
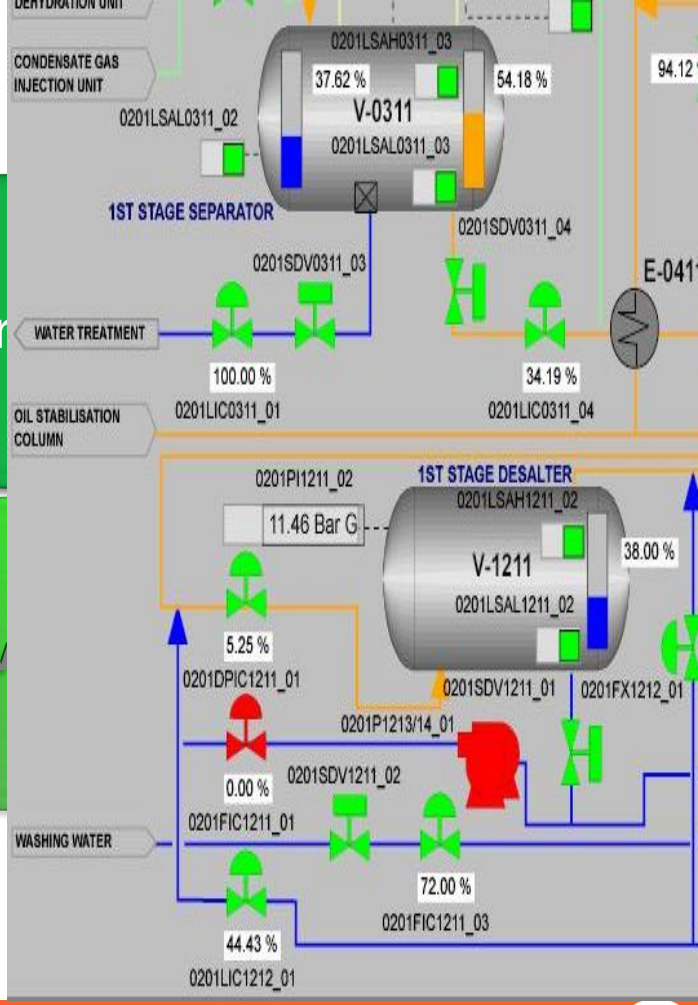
PI ProcessBook



- Display of **real-time and historical data**
  - Process representation
  - **Trend** with traces
  - Context management with PI AF
- Allow for **process monitoring** and review of problematic events



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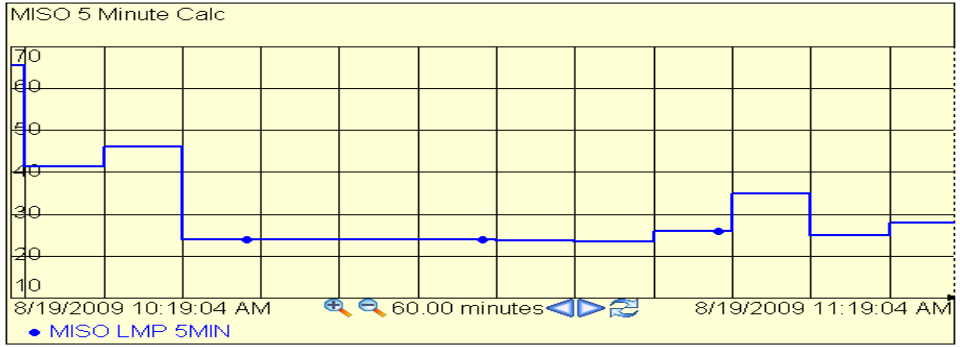
Demand Response Overview

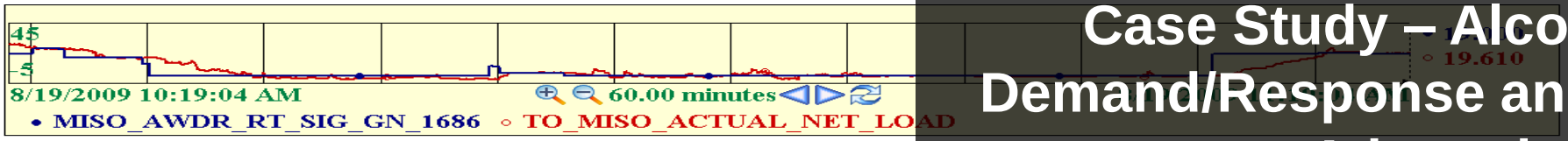
TOTAL POT LINE LOAD: 455.39 MW

	Real Energy	Regulation	Spin Reserve
Cleared	19	18	00
Deployed	19	00	00

OCB 1500	91.3
OCB 1502	90.8
OCB 1503	92.8
OCB 1504	90.4
GCS 3805	00.0
GCS 3806	90.0
GCS 3800	00.0



Current Average Price	28.50 dollars
5-MIN LMP Price	28.05 dollars
Last Hour LMP Price	31.75 dollars



Homepage | Energy Flow | WPP Switchyard | Generation Trends | Warrick Overview | Pot Line Trends | Dispatch Status

Case Study – Alcoa Demand/Response and Adaptation

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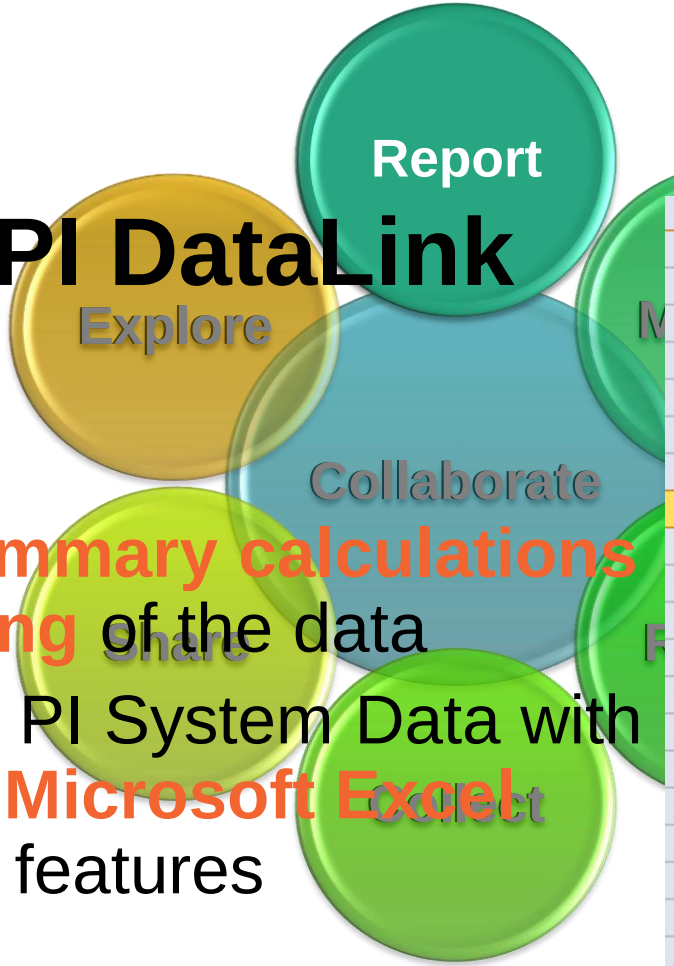
PI DataLink



Excel

	A	B	C	D
1	Début	5/27/2010 13:40		
2	Fin	5/28/2010 13:40		
3				
4	**Date**	**BA:CONC.1**	**BA:LEVEL.1**	**BA:TEMP.1**
5	27-May-10 13:51:28	43.80355835	0.69	5.41
6	27-May-10 13:51:58	0	0.00	0.00
7	27-May-10 14:07:28	5.801473618	12.40	10.64
8	27-May-10 14:19:58	18.39671898	21.03	20.03
9	27-May-10 14:45:58	25.30208397	39.79	45.05
10	27-May-10 14:55:28	40.00126648	33.46	28.58
11	27-May-10 15:12:28	42.83501053	0.65	0.83
12	27-May-10 15:12:58	0	0.00	0.89
13	27-May-10 15:27:28	5.907530308	10.27	10.69
14	27-May-10 15:42:28	20.59512711	22.60	20.78
15	27-May-10 16:06:58	27.59270096	37.20	42.05
16	27-May-10 16:13:28	39.76164246	35.06	27.03
17	27-May-10 16:33:28	43.08703995	0.53	0.92
18	27-May-10 16:33:58	0	0.60	0.98
19	27-May-10 16:50:58	6.635637283	13.87	13.76
20	27-May-10 17:06:58	19.4419651	24.95	20.57

- Allows **summary calculations** and **filtering** of the data
- Enhances PI System Data with access to **Microsoft Excel reporting** features

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PM-#3416354-v31-DWO_Locality_Barriers_CCP_Report_Template_Prototype_3.xlsx - Excel

FILE | HOME | INSERT | PAGE LAYOUT | FORMULAS | DATA | REVIEW | VIEW | DEVELOPER | ADD-INS | PI DATALINK | PI BUILDER | POWERPIVOT

Current Value | Archive Value | Compressed Data | Sampled Data | Timed Data | Calculated Data | Time Filtered | Search | Properties | Update | Settings | About | Help | Notification Search

Single Value | Multiple Value | Calculation | Search | Properties | Update | Resources | Notifications

WATER CORPORATION

D7

CRITICAL CONTROL POINT PERFORMANCE

Filter	Date From	Date To		Data Last Updated
Month / Year	01/07/2010	31/07/2010	31 day period	21/09/2010 12:40

District/Locality CCP	% Hours Recorded	Critical Limit - % Good In Band	Critical Limit - % Good Low	Critical Limit - % Good High	Target Limit - % Good In Band	Target Limit - % Good Low	Target Limit - % Good High	# Alarms	Critical Alarms Low	Critical Alarms High	Target Alarms Low	Target Alarms High	Last Refresh
SWR													
Bunbury													
Australind													
Chlorine_Residual_Inlet	R 31.1	G 98.2	G 99.5	G 98.7	G 85.0	G 96.6	G 88.4	G 0	G 0	G 0	G 0	G 0	21/09/2010 12:40
Turbidity	R 31.1	G 100.0	G 100.0	G 100.0	O 98.7		G 98.7	G 0		G 0			21/09/2010 12:40
UV_Dose	R 31.1	R 88.7	G 88.7		N/A			G 0	G 0				21/09/2010 12:40
Boyanup													
Chlorine_Residual_Inlet	R 31.1	O 98.2	O 99.5	O 98.7	R 85.0	O 96.6	R 88.4	G 0	G 0	G 0	G 0	G 0	21/09/2010 12:40
Turbidity	R 31.1	G 100.0	G 100.0	G 100.0	O 98.7		R 98.7	G 0		G 0			21/09/2010 12:40
UV_Dose	R 31.1	R 88.7	G 88.7		N/A			G 0	G 0				21/09/2010 12:40
Collie													
Chlorine_Residual_Inlet	R 31.1	G 98.2	G 99.5	G 98.7	G 85.0	G 96.6	G 88.4	G 0	G 0	G 0	G 0	G 0	21/09/2010 12:40
Turbidity	R 31.1	G 100.0	G 100.0	G 100.0	O 98.7		G 98.7	G 0		G 0			21/09/2010 12:40
UV_Dose	R 31.1	R 88.7	O 88.7		N/A			G 0	G 0				21/09/2010 12:40
Darkan													
Chlorine_Residual_Inlet	R 31.1	G 98.2	G 99.5	G 98.7	R 85.0								
Turbidity	R 31.1	G 100.0	G 100.0	G 100.0	O 98.7								
UV_Dose	R 31.1	R 88.7	G 88.7		N/A								
Busselton													
Mandurah													
Dwellingup													
Chlorine_Residual_Inlet	R 31.1	G 98.2	G 99.5	G 98.7	R 85.0								
Turbidity	R 31.1	G 100.0	G 100.0	G 100.0	O 98.7								
UV_Dose	R 31.1	R 88.7	G 88.7		N/A								
Mandurah													
Chlorine_Residual_Inlet	R 31.1	O 98.2	O 99.5	O 98.7	R 85.0	O 96.6	R 88.4	G 0	G 0	G 0	G 0	G 0	21/09/2010 12:40
Turbidity	R 31.1	G 100.0	G 100.0	G 100.0	O 98.7		G 98.7	G 0		G 0			21/09/2010 12:40

Home | GSR | IMS_Trial | NWR | SWR | Thresholds

Case Study – Water Corporation of Western Australia Critical Control Point Performance

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PI DataLink 2013 & Microsoft Excel 2013

- **PI DataLink 2013**
  - **PI AF** support with the new **PI System Search** engine
- **Microsoft Excel 2013**
  - Business Intelligence (BI) tools are integrated
  - Microsoft **PowerPivot**
  - Microsoft **Power View**

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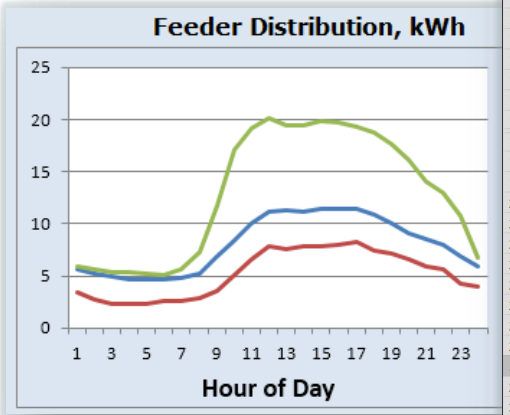
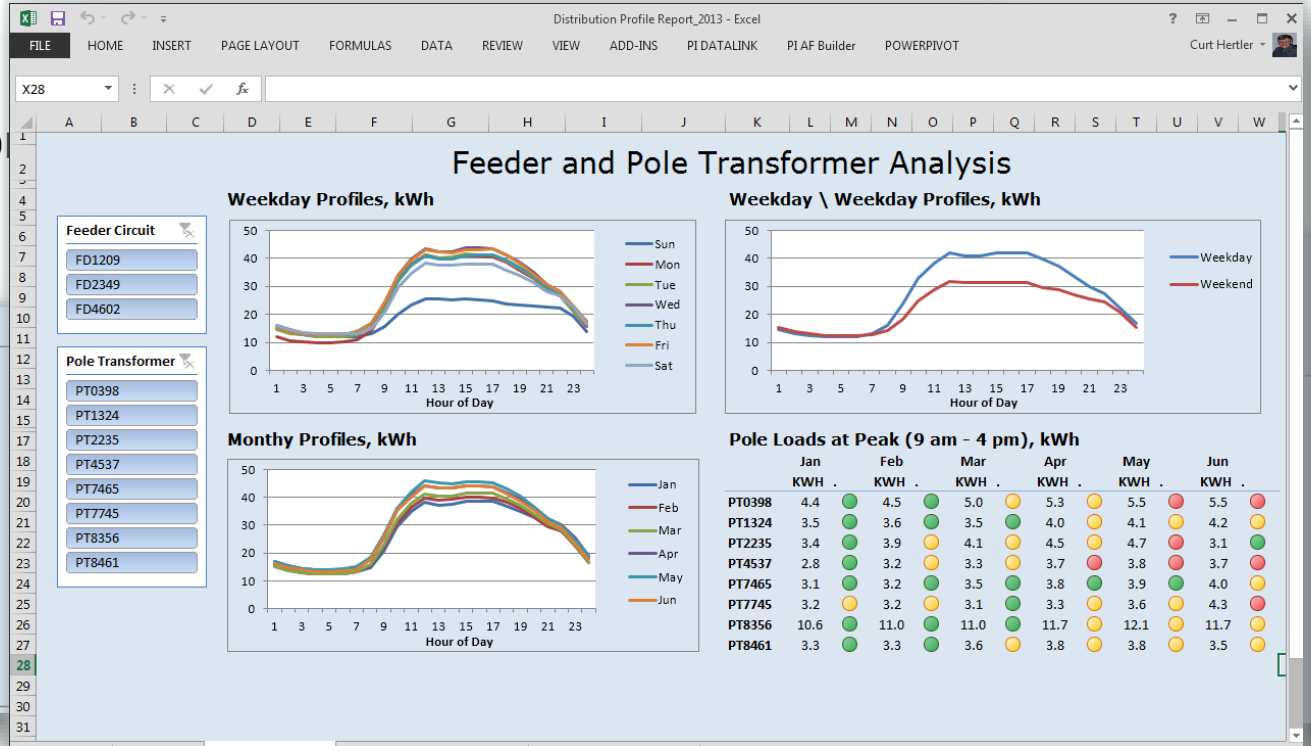
Demand Profiling and Grid Analysis

Excel

Substatio





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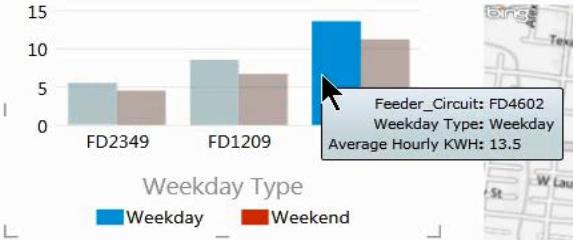
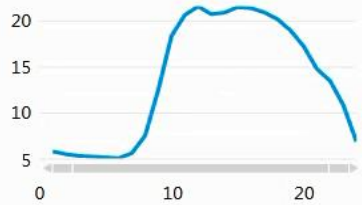
Bighorn Basin Substation Service Area

Circuit Drilldown

sort by Average Hourly KWH asc



Distribution Profile



Service Profile

Area Meters

Service

Agriculteral Commercial Industrial Residential

PI Coresight

Explore

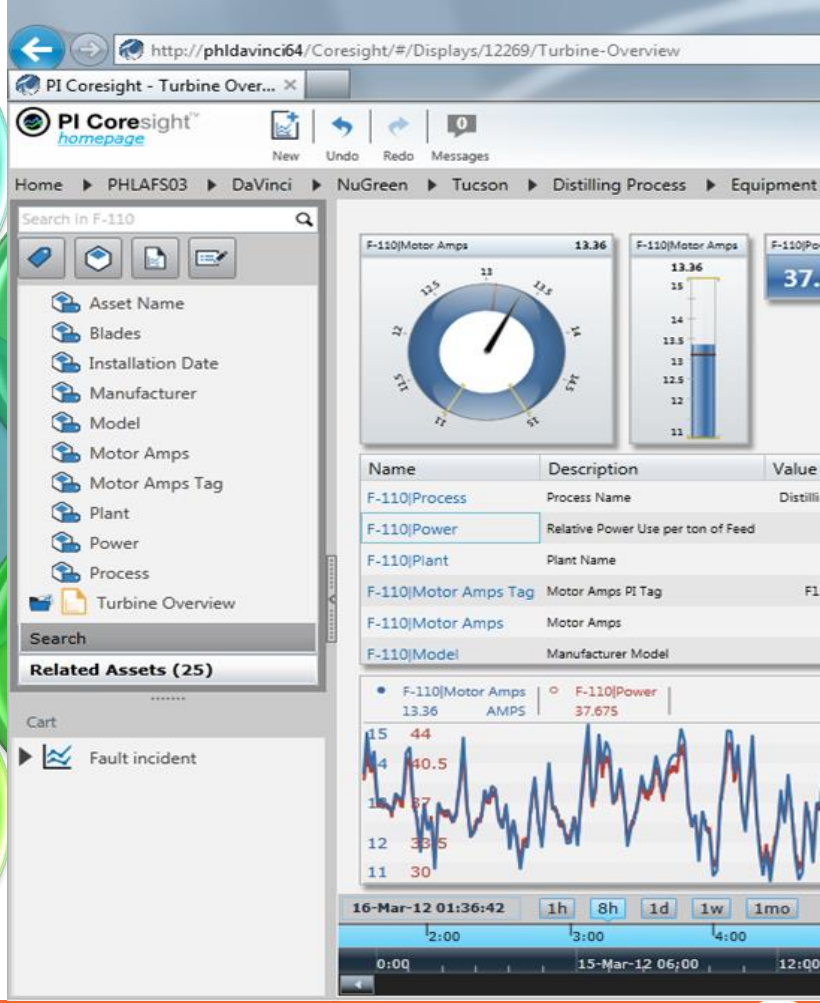
Report

Collaborate

Share

Collect

- **Modern** Web based visualization tool
- Facilitates **ad hoc analysis**
- **Instantaneous learning**
- Software with a **fast release cycle** to fit your needs
- **No client-side installation**



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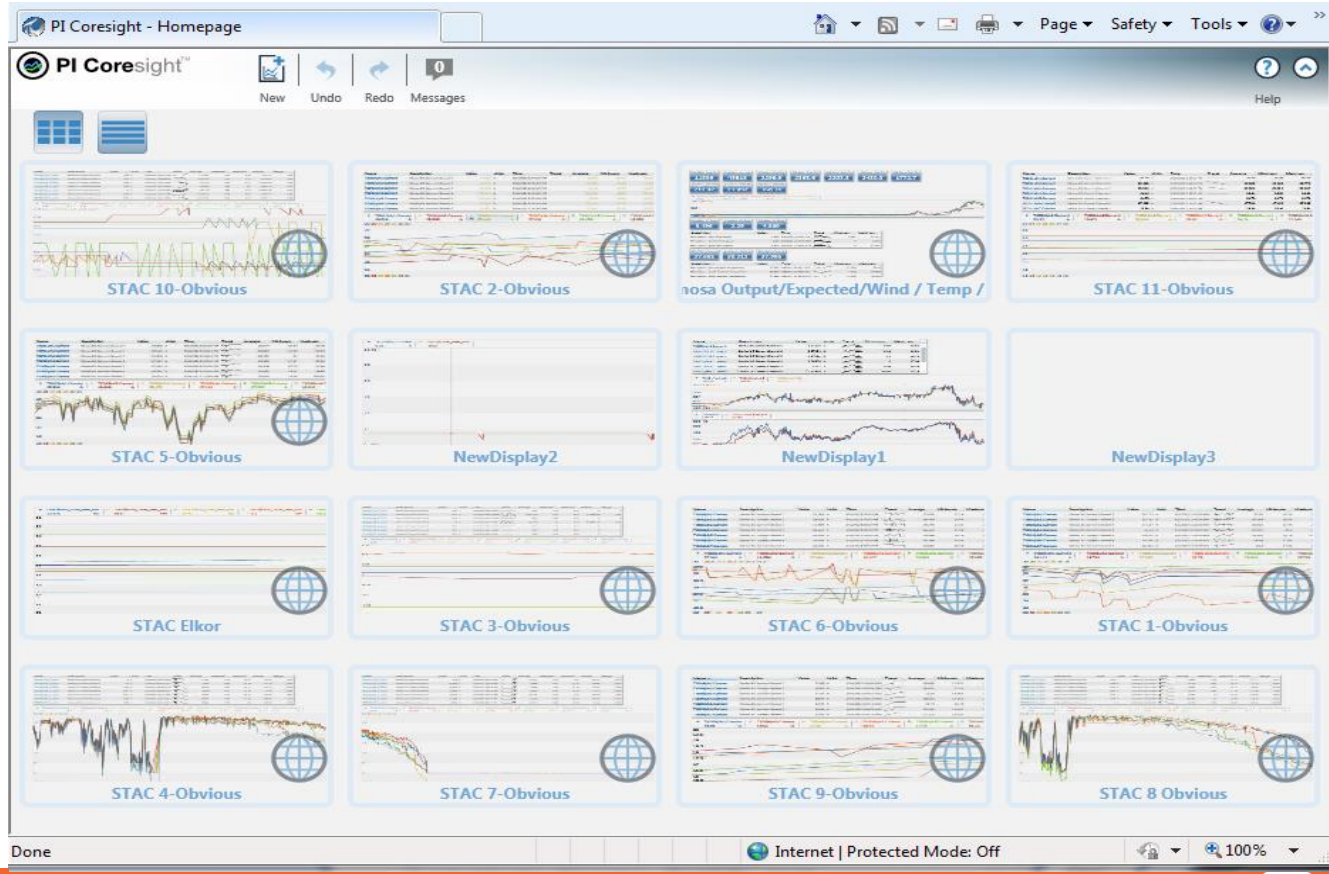
Benefits of PI Coresight at AMONIX

POWERING THE FUTURE NOW™

- **Minimal learning curve**
- Rapid trend analysis
- Leveraging PI AF structure and data



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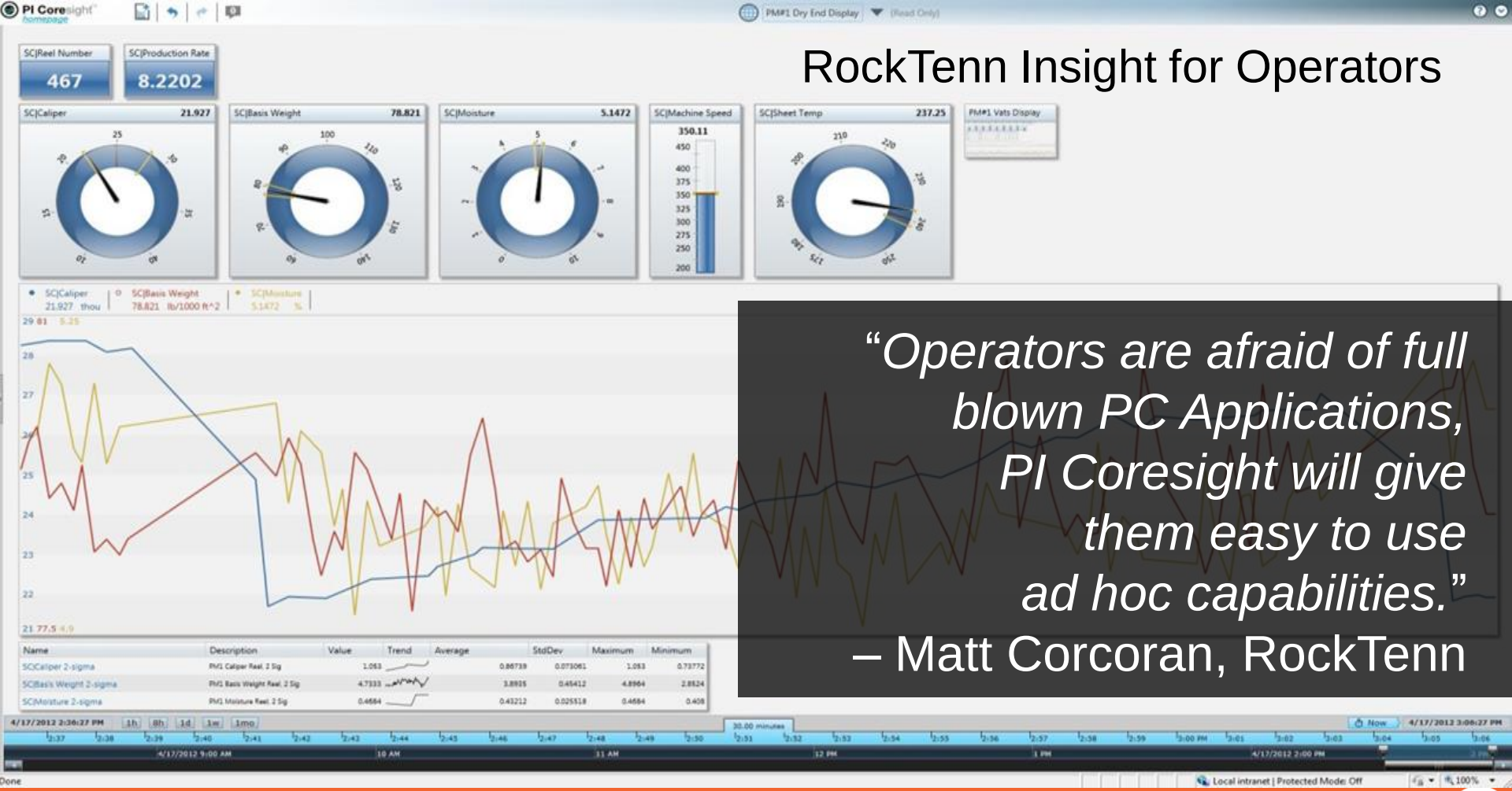
RockTenn Insight for Operators



"Operators are afraid of full blown PC Applications, PI Coresight will give them easy to use ad hoc capabilities."

– Matt Corcoran, RockTenn

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Visualization and Mobility

Your needs are evolving:

- **Remote** access
- Access at **any time**
- **Self-service** usage

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Mobility and the PI System

- Mobile **PI Coresight** application for the **iPad** and the **iPhone** now available!
  - Native application
  - Free download on the Apple App Store™
  - Test it now with **sample data**

Available on the App Store

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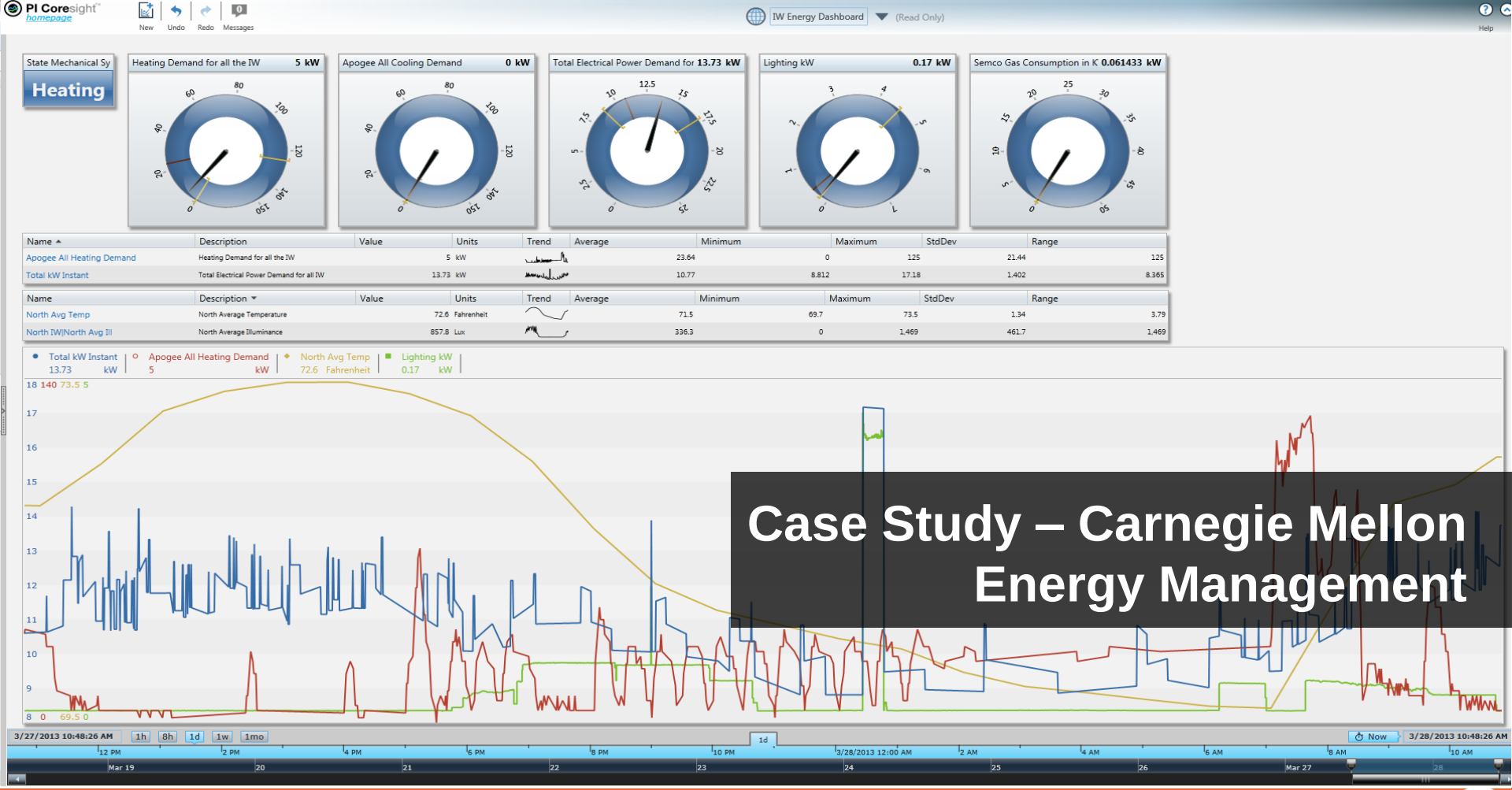

Case Study – Carnegie Mellon Energy Management

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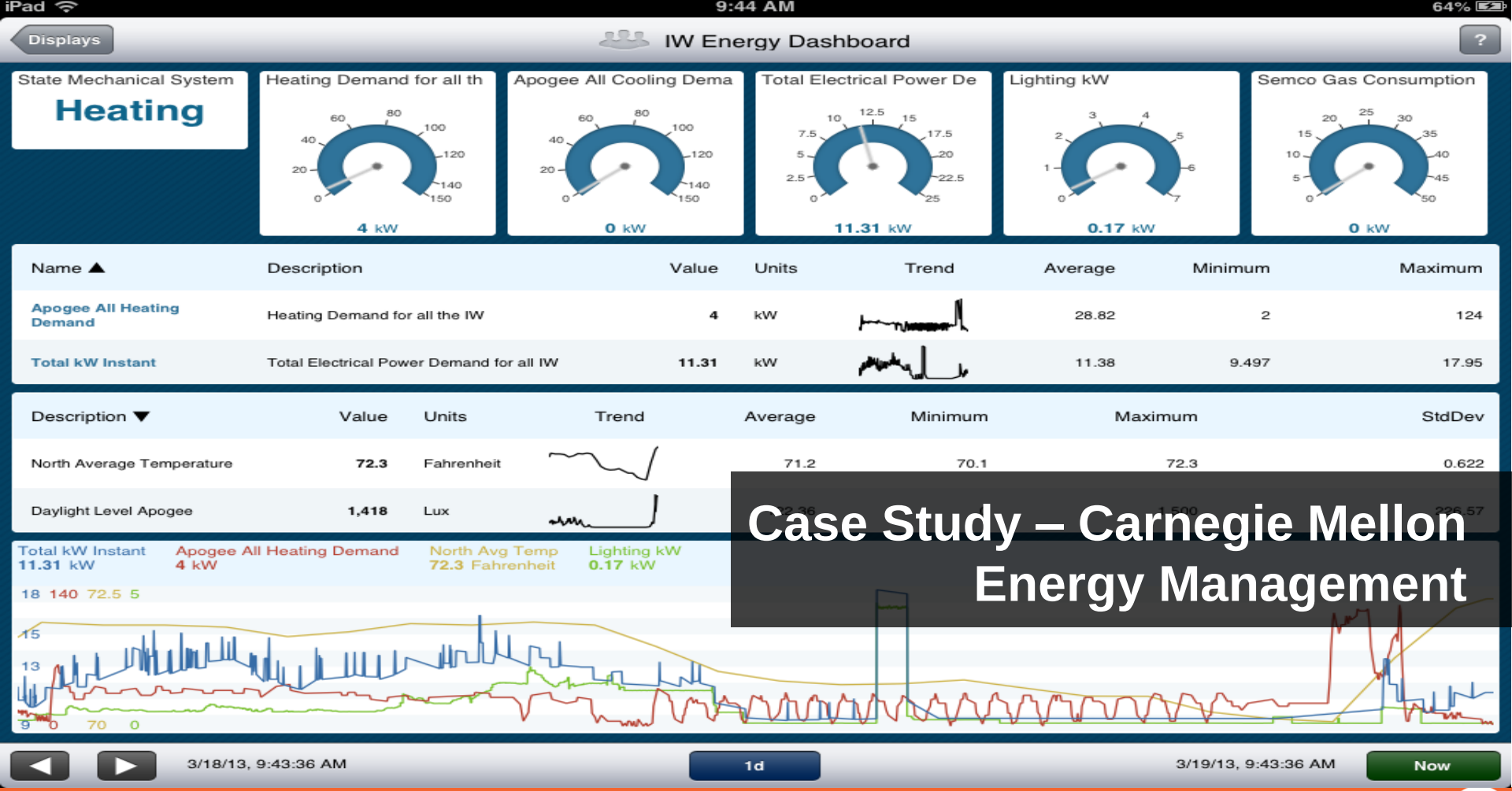

Case Study – Carnegie Mellon Energy Management

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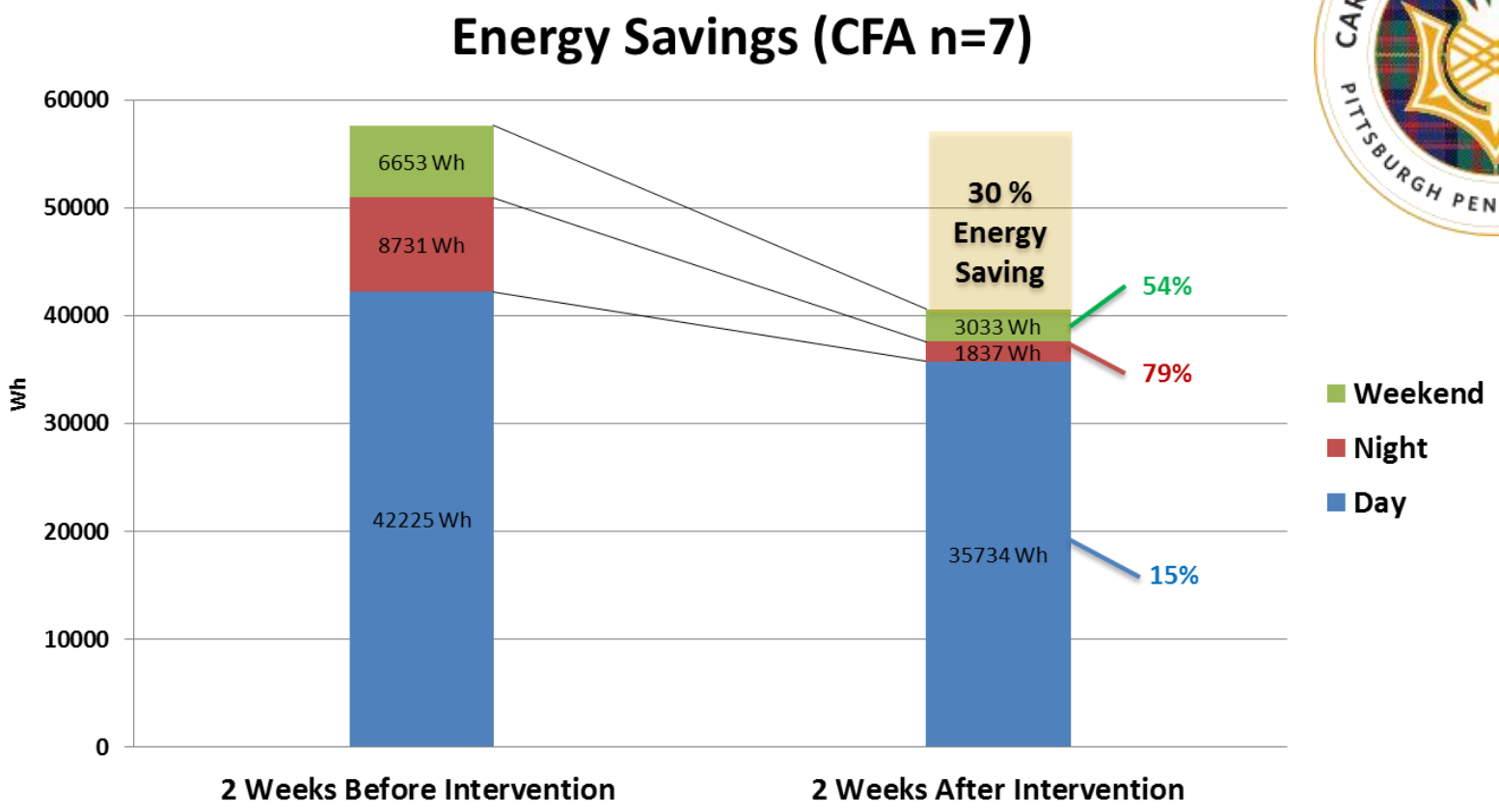
Case Study – Energy Management



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Support for iPad and iPhone

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Support the Devices you Use

How can you tell now what every team member will use…

tomorrow…

next week…

especially next year!

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Collect Data with Different Devices

- Browser interface is device agnostic
- Simplified screen
- Android phone & tablet
- iPhone and iPad
- Any modern browser (**HTML5** support)

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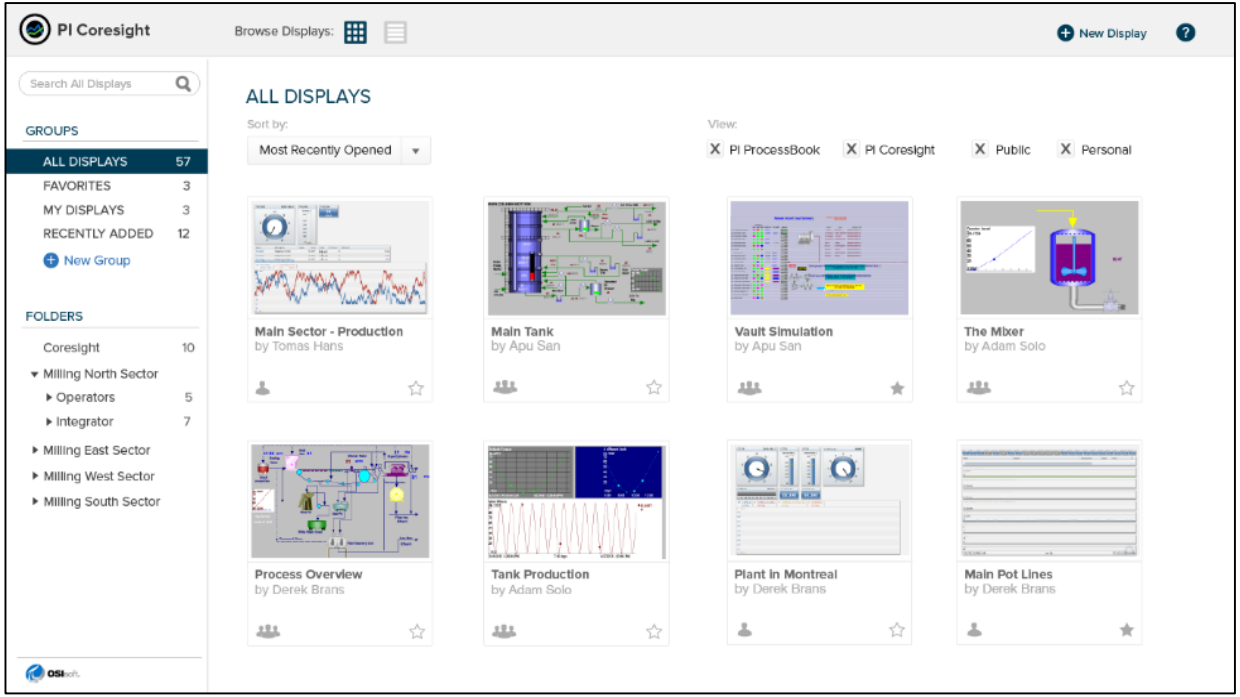
View PI ProcessBook Content on Different Devices



- **Browse PI ProcessBook displays** the same way as PI Coresight
- Any modern browser (**HTML5** support)

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PI Visualization Suite Benefits

- Access to the data in the format you want **reduces the time to insight**
- Access to the data when and where you want **facilitates collaboration and sharing of insights**
- **All** visualization tools to **any** user gives **the right tool** for the job **at the right time**

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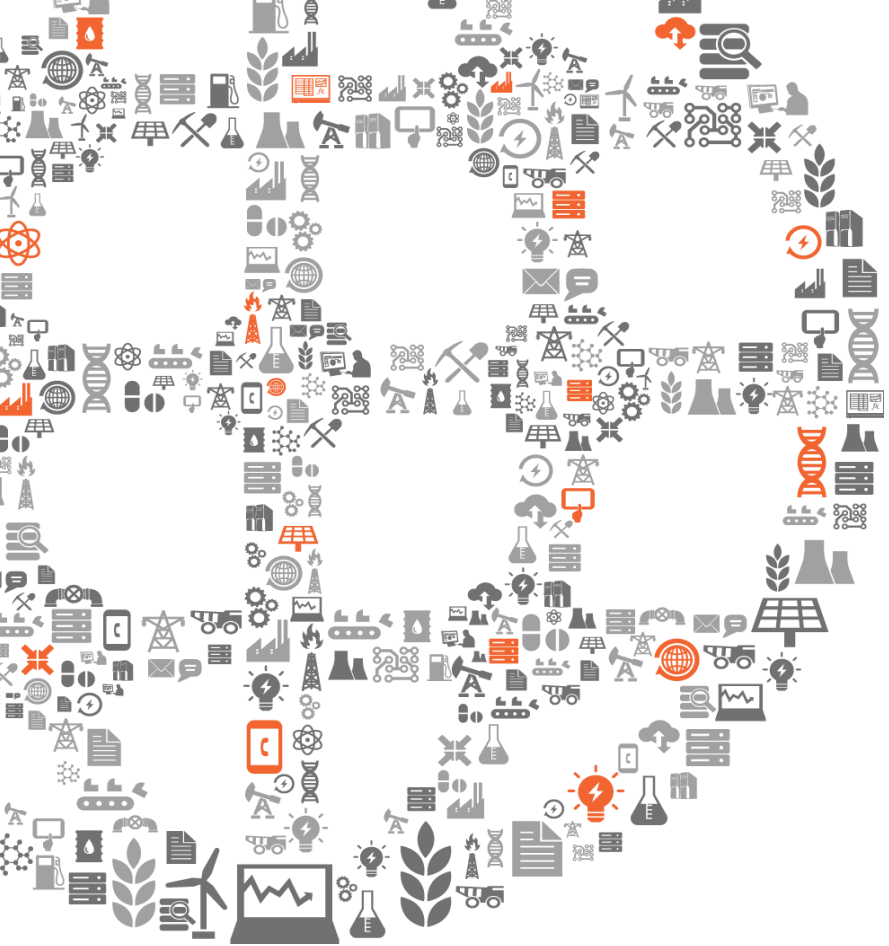

Questions

Please wait for the **microphone** before asking your questions

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