Turning **insight** into **action**.

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Using the PI System and ADM's RtEMIS™ to Manage Energy Costs

Presented by **Pat Burke, Flakeboard Company Ltd.**

Agenda

- Who is Flakeboard?
- Need for Energy Management
- The RtEMIS Solution
- Benefits & Next steps
- Conclusion

Flakeboard Profile

Flakeboard
Passion for Panels™

- Incorporated in 1960, Flakeboard is an industry leader in the production of quality composite wood panels with 8 facilities in Canada and the US
- The St. Stephen facility employs continuous panel production technology on three particleboard lines, two thin MDF (Medium Density Fibreboard) lines providing Flakeboard with a product range second to none.
- Over 80% of the products shipped from this facility are further upgraded with value-added finishes such as melamine, decorative paper, direct print or paint, in hundreds of different colors and patterns.

The Need for Energy Management

- The St. Stephen facility consumes millions of dollars a year on Energy
- Multiple energy types Electricity, Oil, Gas, Water and Dust complicate analysis.
- Mixed/multiple fuel sources within an EAC (Energy Account Centre)
- Complex energy costs were difficult to allocate to finished products across multiple production lines

The Need for Energy Management

- It is much easier to save energy when you can see how you are using it
- Understand how much energy are you using?
- Know when & where are you are using energy?
- What is the ideal energy consumption?
- How much progress have you made at reducing consumption?

The Need for Energy Management

- Conceptually it's a simple process...
- But doing this analysis manually (or using Excel alone) tends to get very complicated
- The tedious data manipulation takes up precious time that could be better spent doing something that a computer can't do for you...
- Thus the value of an energy management software to assist with this sort of data analysis and the value in EMIS (Energy Management Information System).

The Process

- Contact Provincial /State Authority to apply for funding
- Carry out the EMIS Audit
- Develop the basic requirements for the EMIS System
- Install necessary meters
- Install and Configure PI System and ADM's RtEMIS
- Use the information to reduce Energy Usage
- Provide Training

Core Requirements

Energy Cost Reporting for:

- Ongoing operational costing
- Cost Allocation Reports

Cost that takes into account:

- Consumption
- Demand
- Unaccounted energy
- Actual billing contracts

Core Solution Requirements

Real time data collection for:

- Energy Sources (Electricity, Gas, Oil, Dust, Water, Air, Steam)
- Production data
- Environmental data
- Operational data

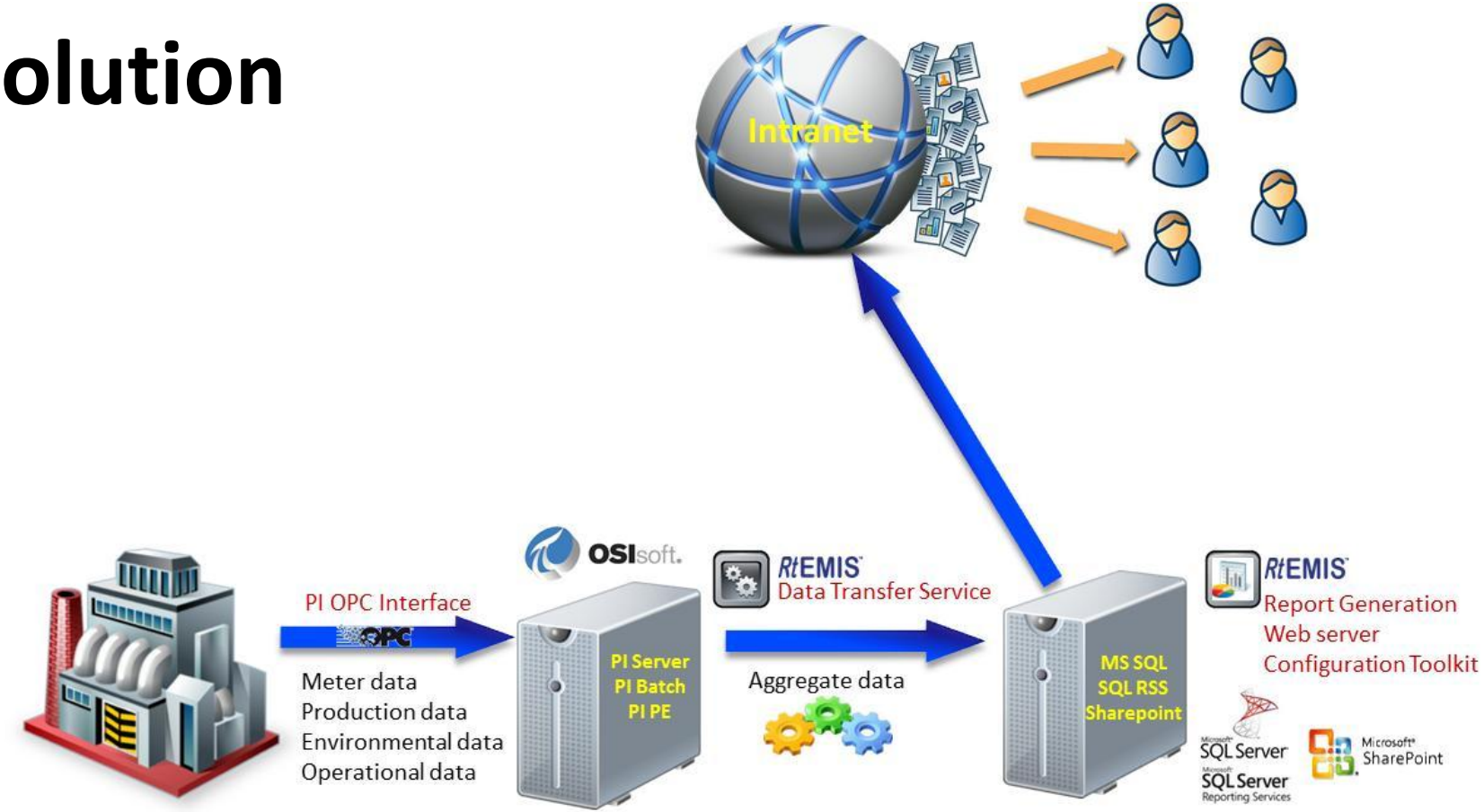
Provide analysis and near real time reporting of energy performance by:

- EAC
- Area
- Site

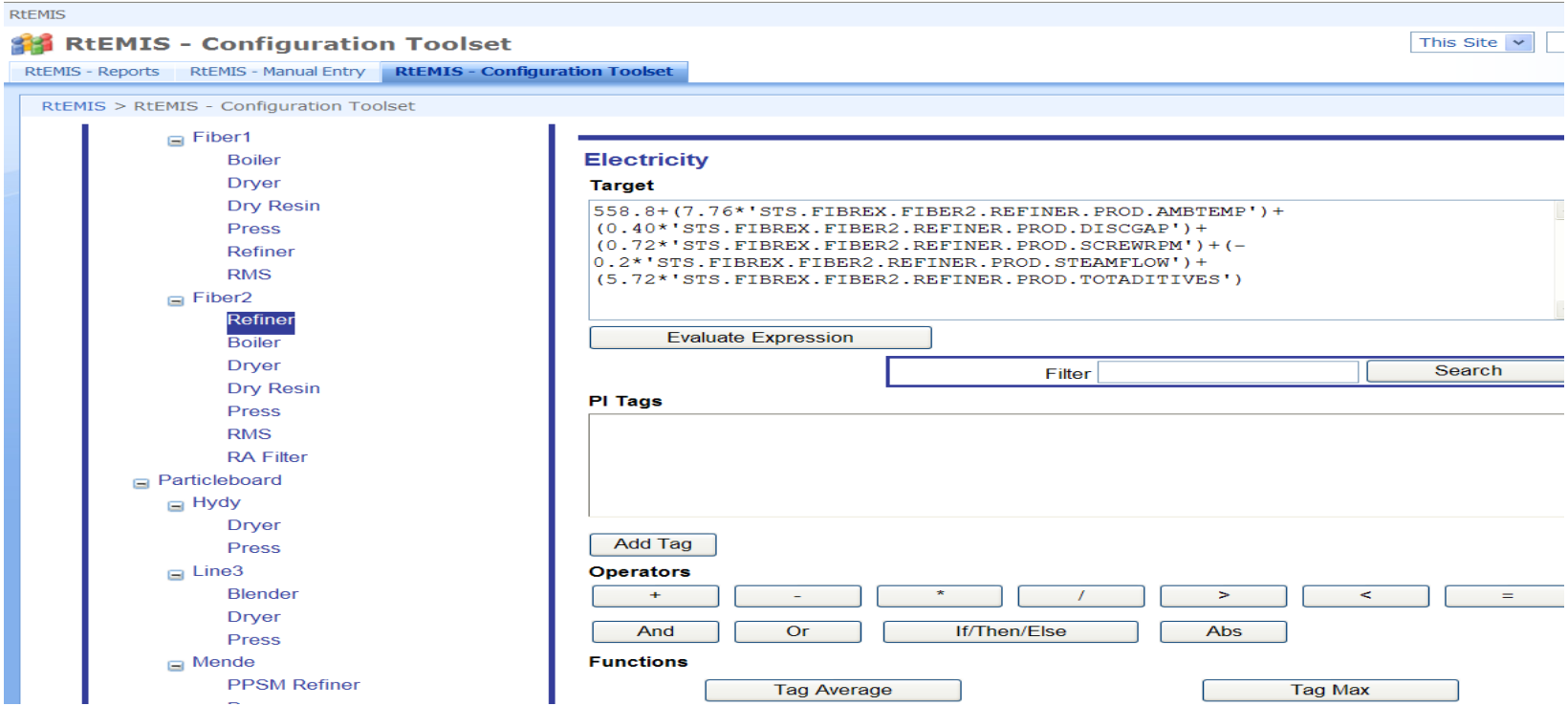
RtEMIS is Born

- Makes Energy Visible
- Calculates variance to target
- Allows multi-level reporting.
- Results displayed in energy units or cost.
- Tracks real or virtual meters.
- Displays KPI's.
- Flexible Reporting intervals
- Data entry via SharePoint WebPart to the PI Server
- Area and Site Roll-ups
- Multiple Sites

Solution



Easy Entry of PI Performance Equations



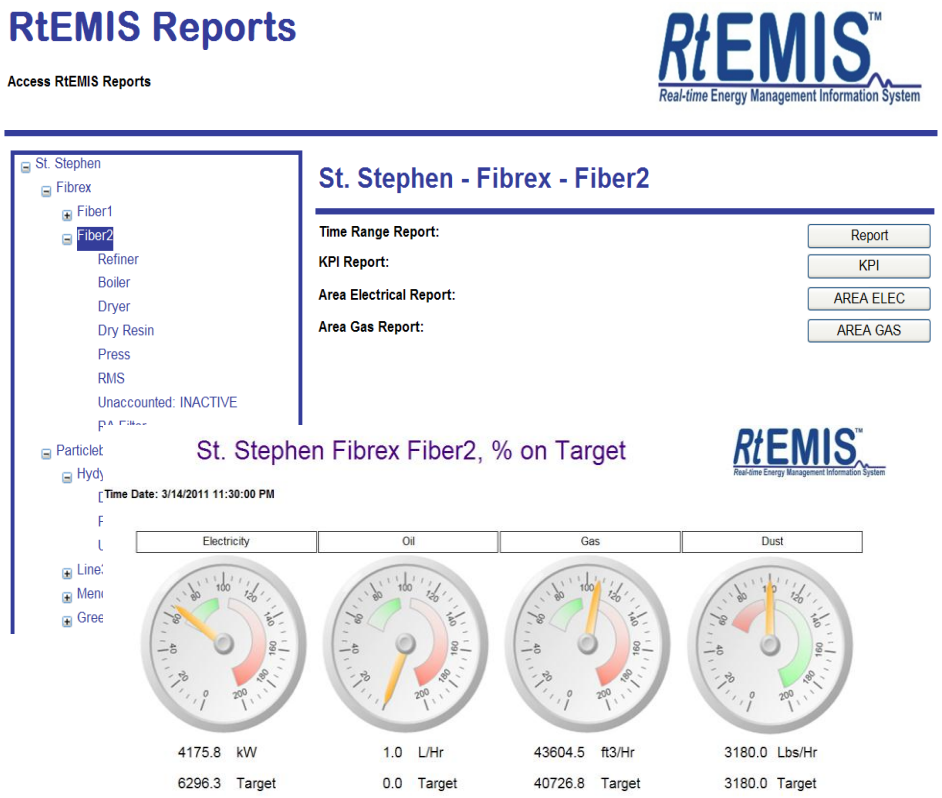
Performance Against Target

Quick Identification of Costs

Start Date	3/4/2011 8:00:00 AM	End Date	3/11/2011 9:55:39 AM
Units	Dollars	Electrical Units	kWh
Gas Units	ft3	Oil Units	L
Dust Units	Lbs	Air Units	Ft3
Water Units	US Gal		

1 of 2 | 100% | Find | Next | Select a format | Export

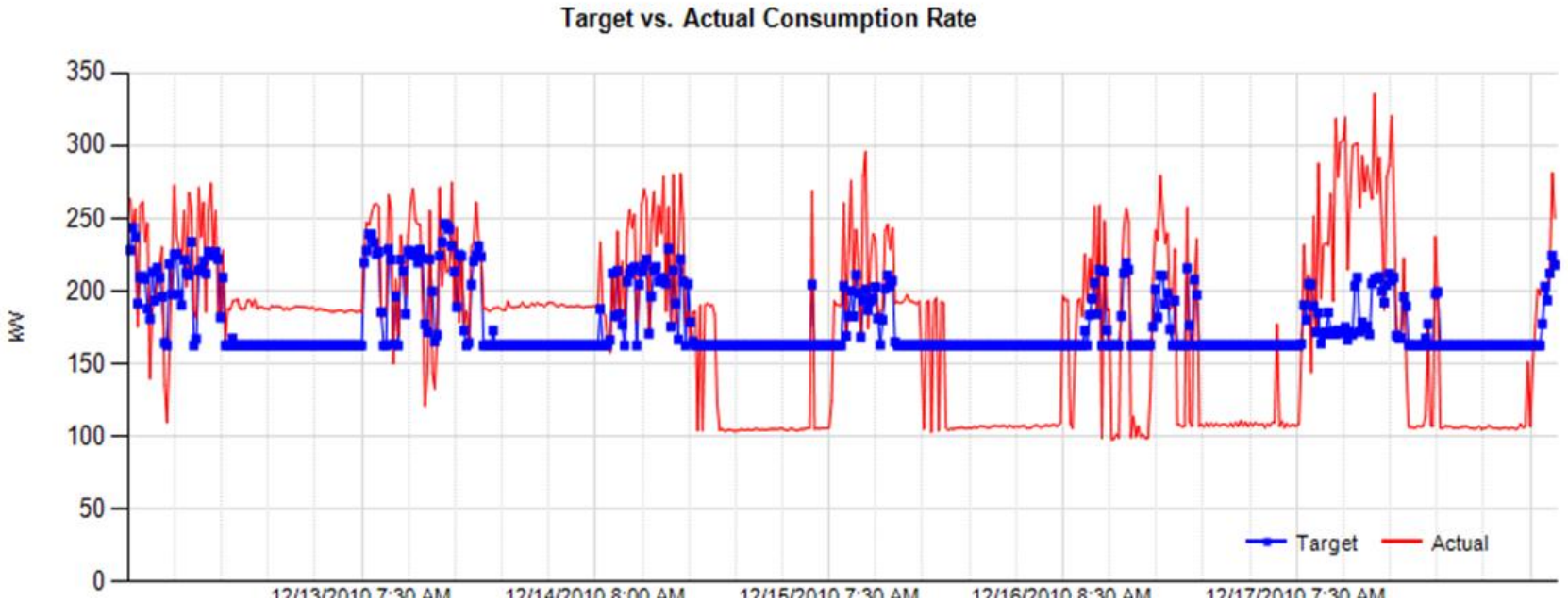
Site	Area	EAC	Electricity	Oil	Gas	Dust	Water	Air
		Total	$2250.89	$0.00	$15502.76	$0.00	$2513.38	$1122.64
	Total		$2250.89	$0.00	$15502.76	$0.00	$2513.38	$1122.64
Fibrex	Fiber1	Boiler	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
		Dry Resin	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
		Dryer	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
		Press	$6151.63	$0.00	$0.00	$0.00	$0.00	$0.00
		Refiner	$835.95	$0.00	$0.00	$0.00	$0.00	$0.00
		RMS	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
		Total	$6987.58	$0.00	$0.00	$0.00	$0.00	$0.00
	Fiber2	Boiler	$0.00	$0.00	$39494.52	$0.00	$0.00	$0.00
		Dry Resin	$3997.43	$0.00	$4398.26	$0.00	$0.00	$0.00
		Dryer	$0.00	$0.40	$9355.63	$19243.00	$0.00	$0.00
		Press	$5814.10	$0.00	$4111.64	$0.00	$0.00	$0.00
		RA Filter	$1093.09	$0.00	$0.00	$0.00	$0.00	$0.00
		Refiner	$15052.40	$0.00	$0.00	$0.00	$0.00	$0.00
		RMS	$1175.16	$0.00	$0.00	$0.00	$0.00	$0.00



Benefits

- Plant is now modeled by logical EAC's
- Makes consumption visible for decision makers.
- Area Managers now see the impact of decisions on performance and bottom line profitability.

Quickly Identify Opportunities

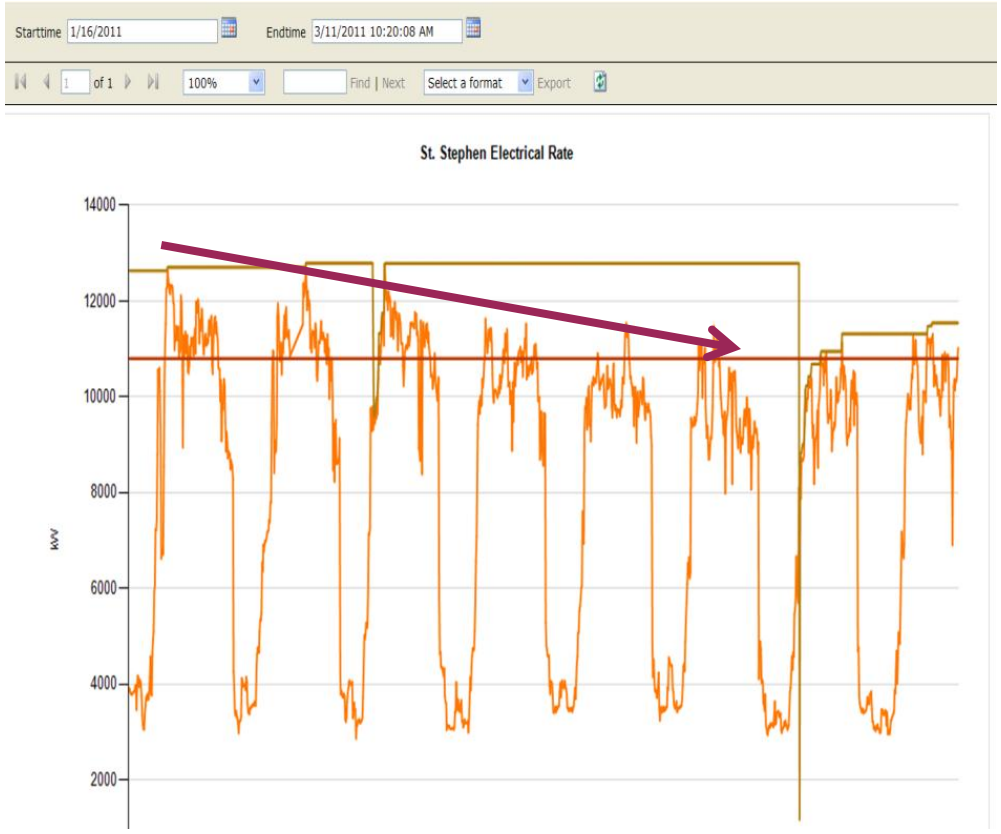


Benefits

Project	Jan			Feb		
	Savings	Opportunity	Implementation	Savings	Opportunity	Implementation
Kimwood Sander Bag House Fan	$ 2,549.80	$ 252.27	$ -	$ 2,561.20	$ 179.93	
Make-up Air System	$ 16,194.54	$ -	$ -	$ 26,694.30	$ -	
Splits of Offline Sander		$ 2,430.84	$ (1,700.00)	$ 2,259.05		
York Chiller	$ 385.80	$ 143.21	$ -	$ 438.81	$ 136.88	
Berg Chiller	$ 93.68	$ 22.45	$ -	$ 104.68	$ 17.06	
Mende Konus	$ -	$ 1,870.83	$ -	$ 1,039.58	$ 1,189.88	
RMS Lighting						
Total	**$ 19,223.82**	**$ 4,719.61**	**$ (1,700.00)**	**$ 33,097.62**	**$ 1,523.75**	**$ -**

Increase Profits

- We have significantly lowered total energy consumption by changing practices and behaviours.
- RtEMIS provides web based real-time and summary reports by hour, shift, week or month.



Benefits

- Staff focused on energy savings
- Product cost reduction
- Lower operating cost
- Efficient decision making tool
- Energy targets
- Global company image
- An awareness that energy is manageable
- A cultural change/shift
- Real Targets for energy consumption
- A knowledgeable staff

Conclusion

- Energy Savings
  - Industry standard is 3 – 10% savings
  - Our EMIS Audit suggested 3.2% savings
  - After just a few months of having the system installed we are in our way to surpass the EMIS audit suggested savings
  - Simple Pay-back less than 1 year (100k incentive funding received)

- Productivity improvements
  - Best Practice is quickly identified
  - Historic “ways of working” are challenged 24/7
  - Improvements are sustained for the long run

Future Plans and Next Steps

- Flakeboard has a second site with RtEMIS and it is expected to increase that number to 4 by year end
- After seeing the benefits of having a Real-time Information Management Infrastructure, St. Stephen is looking at expanding the PI System to not just look at Energy but to collect all production data

Trying to save energy without information is like trying to get somewhere in a strange city without any road signs or maps…

- It will take you much longer to get there
- You'll miss all the shortcuts
- You'll never know how far you've gone
- You'll never know how far you've got left to go.
- You may just end up lost

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Questions

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Thank you