Superior Energy Performance: 
Taking Strategic Energy Management Up and to the Right

Market Transformation 2011
John Wallner, Sector Manager
April, 2011

NORTHWEST ENERGY EFFICIENCY ALLIANCE
## NW Energy Management Demonstration Pilot Project
### Public Participant Summaries

<table>
<thead>
<tr>
<th>Company</th>
<th>Industry</th>
<th>Sell Products Retail?</th>
<th># of Corp. Sites Globally</th>
<th>Ave. Annual Global Revenue (US$)</th>
<th>International?</th>
<th>Participating Site Location</th>
<th># Personnel at Participating Site</th>
<th>% of Site Operating Expenses Attributed to Energy Costs at Site</th>
<th>MW of Electricity Saved Since Start of Pilot</th>
<th>MMBTU’s of Natural Gas Saved Since Start of Pilot</th>
<th>Year Participating Site ISO 9001 Certified</th>
<th>Year Participating Site ISO 14001 Certified</th>
<th>Site Required by Parent Company to Participate in Pilot?</th>
<th>Site Pursing ISO 50001 &amp;/or SEP Certification?</th>
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<tbody>
<tr>
<td>Amcor Rigid Plastics</td>
<td>Packaging</td>
<td>No</td>
<td>&gt;300 (~28 Rigid Plastics in NA)</td>
<td>&gt;$10 billion</td>
<td>Yes</td>
<td>WA</td>
<td>~100</td>
<td>~12%</td>
<td>None yet - expected in 2012</td>
<td>2,565</td>
<td>N/A</td>
<td>2005</td>
<td>Currently pursuing (2012 anticipated)</td>
<td>Yes</td>
</tr>
<tr>
<td>Grays Harbor Paper</td>
<td>Paper Production</td>
<td>Yes</td>
<td>1</td>
<td>&gt;$100 million</td>
<td>No</td>
<td>WA</td>
<td>~250</td>
<td>~8%</td>
<td>3,774</td>
<td>1994</td>
<td>2007</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Kenworth/PACCAR - Renton</td>
<td>Automotive</td>
<td>Yes</td>
<td>15 manufacturing</td>
<td>&gt;$1 billion</td>
<td>Yes</td>
<td>WA</td>
<td>~100-1,200</td>
<td>~1%</td>
<td>17</td>
<td>2007</td>
<td>2007</td>
<td>N/A</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Simplot Food Group – Aberdeen Site</td>
<td>Food Processing</td>
<td>No</td>
<td>34 manufacturing</td>
<td>&gt;$1 billion</td>
<td>Yes</td>
<td>ID</td>
<td>~250</td>
<td>~5%</td>
<td>None yet</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Earth2O</td>
<td>Bottled Water</td>
<td>Yes</td>
<td>1</td>
<td>Unavailable</td>
<td>No</td>
<td>OR</td>
<td>~50</td>
<td>~2%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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Last updated: 4-6-11
Agenda

- **Strategic Energy Management Questions?**
  - Where does SEP and ISO fit in?
  - Why is this a Market Transformation play?
  - Why is this a good investment for industrials?
  - How does this interact with utility programs?
  - Can utilities rely on this for energy savings?
  - Where does SEP and ISO fit in?
  - When are these not appropriate?
  - Who benefits?

- **NW Superior Energy Performance Pilot**
  - Successes, challenges, forecasted outcomes
Strategic Energy Management

ISO 50001

NEEA's CEI

Mgt. System Standards

Management Systems for Energy

Controls
- Employee Awareness
- Benchmarking

Metering
- Technical Training
- Analysis
- Performance Indicators

US DOE Superior Energy Performance

Strategic Energy Management Programs

Energy Management Elements
Our Market Transformation Aim:

Give a man a fish and he will eat for a day. Teach a man to fish and he will eat for a lifetime.

Chinese proverb
STRATEGIC ENERGY MANAGEMENT:

WHAT IS THE MINIMUM?
A Threshold of a System
- Executive Sponsorship
- Goal Setting
- Tracking System
Market Transformation Theory

Our working hypothesis

- Implementation of CEI leads to persistent measurable energy savings

Testing the hypothesis

- Deploy CEI through field advisors to a targeted industry
- Work with companies to raise the level of implementation maturity
- Measure energy savings
- Independently validate results
Engaged Northwest Food Processors Association to leverage membership awareness

**32 facilities**
committed to CEI

**25 facilities**
engaged in CEI

**15 facilities**
self sustaining CEI 2010
Levels of CEI Implementation Maturity

Level 5  Self Sustaining
- Firm is maintaining NEEA’s CEI independently of NEEA.

Level 4  Practicing
- Firm is implementing plans, measurements, and is generating savings

Level 3  Committed
- Firm has a policy & plans, some dedicated energy management resources

Level 2  Engaged
- Management staff is participating in energy assessment process

Level 1  Aware/Receptive/Interested
- Firm is aware, key 1/1’s explain the program, management is interested
Measuring Energy Savings

Baseline (expected use)

Gap between top-down and bottom-up analyses = behavior change savings

Bottom-up analysis captures savings from energy projects

Top-down analysis captures savings from all sources
Measuring Energy Savings

- Establish baseline energy usage
- Initiate intervention
- Document change in energy usage
## NEEA SEM aMW savings 2006-2010

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy Capital Projects</th>
<th>Business Practices O/M</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>.4890</td>
<td>.3800</td>
<td>.8690</td>
</tr>
<tr>
<td>2007</td>
<td>.5120</td>
<td>.7910</td>
<td>1.303</td>
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<tr>
<td>2008</td>
<td>1.923</td>
<td>1.642</td>
<td>3.565</td>
</tr>
<tr>
<td>2009</td>
<td>.6180</td>
<td>1.828</td>
<td>2.446</td>
</tr>
<tr>
<td>2010</td>
<td>1.450</td>
<td>1.192</td>
<td>2.642</td>
</tr>
<tr>
<td>To Date</td>
<td>4.992</td>
<td>5.833</td>
<td>10.825</td>
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7 Habits of Highly Efficient Companies

1. Efficiency is a core strategy
2. Leadership & organizational support is real and sustained
3. The company has SMART energy efficiency goals
4. The strategy relies on a robust tracking and measurement system
5. The organization puts substantial resources into efficiency
6. The energy efficiency strategy shows demonstrated results
7. The company effectively communicates efficiency results

Source: 2009 Pew Center on Global Climate Change
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<td>2007</td>
<td>Yes</td>
<td>Possibly, waiting to see benefits and/or customer demand - both</td>
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Key Learnings: Successes

- Facilities understand management system rigor and costs/benefits.

- Energy efficiency projects in participating facilities are generating results.

- Field Advisors developing core expertise.

- Industrial interest outside of participants.
Key Leanings: Major Challenges

- Facilities understand management system rigor and costs/benefits.

- Constancy of purpose.

- Investment decision criteria.

- Demand for certification.
Forecasted Outcomes

- Facilities understand management system rigor and costs/benefits.
- 2 facilities are responsible for spreading ISO registration across their companies. (> 20 plants)
- 60% of Field Advisors/Energy champions planning to become certified as *Energy Management Practitioners*.
- Energy Trust will begin to support ISO 50001.
Thank You!

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503-688-5449