
CONTINUOUS ENERGY ▲
IMPROVEMENT ▲
FOR INDUSTRY ▲

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Agenda Today

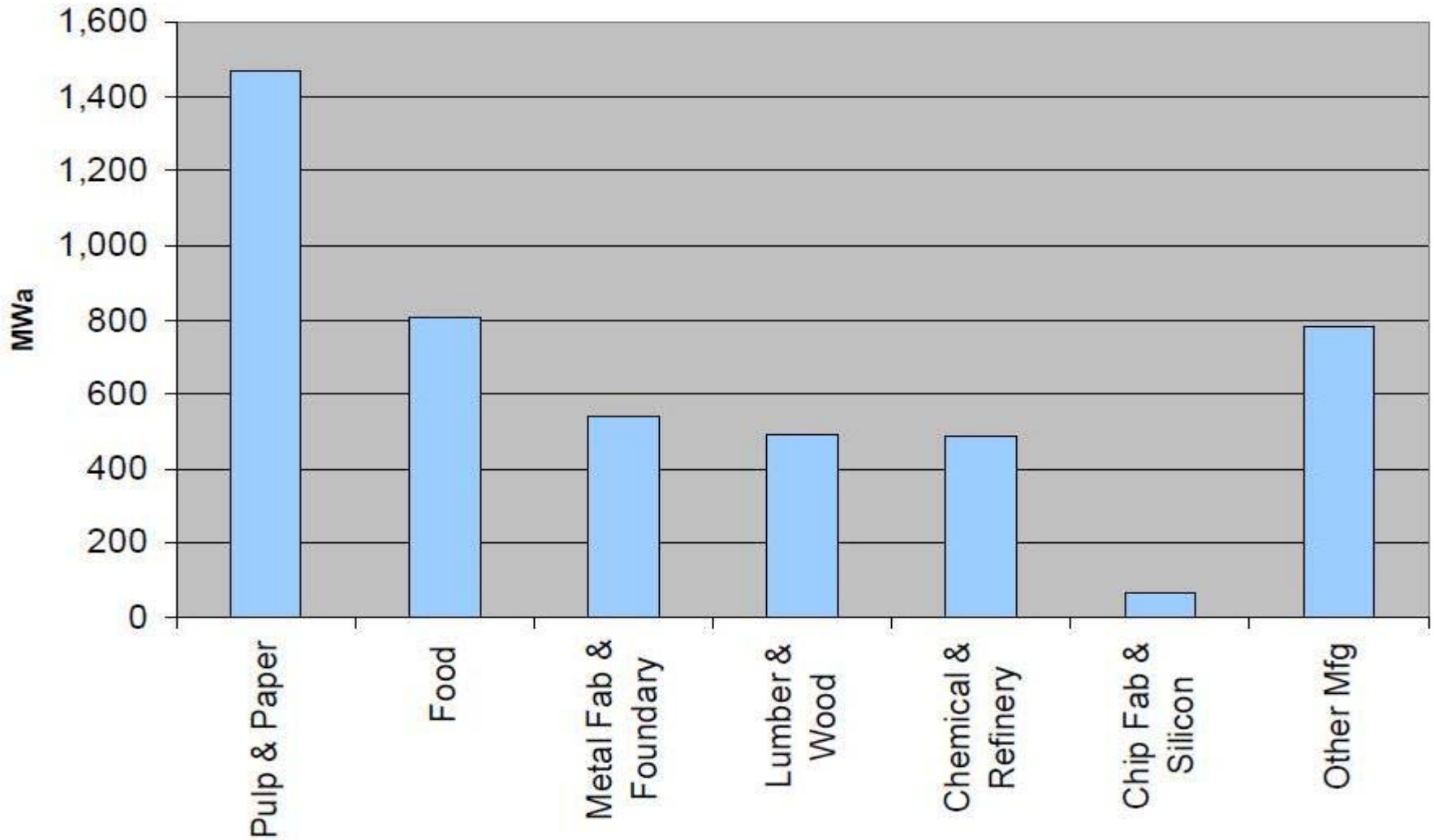
- Mission and opportunities
- CEI
 - *Process, Product, Program*
- Evaluation
- Key learnings
- Going Forward
- Q&A

Mission and Opportunities

Industrial Sector Mission

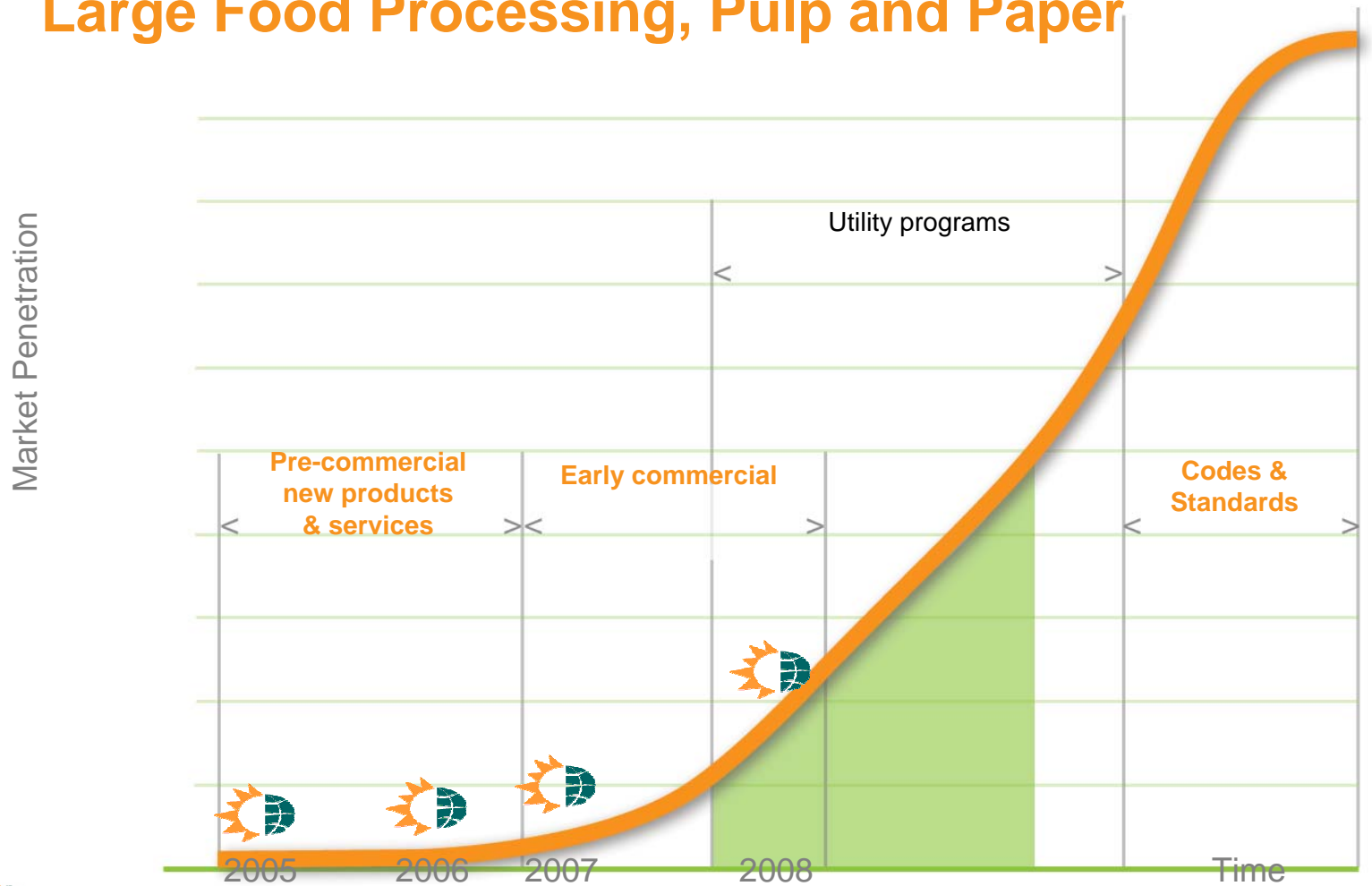


PNW 2006 Non-DSI Industrial Electric Energy Use



Industrial Energy Management

Large Food Processing, Pulp and Paper



Participant Selection

- *Target market participants*
 - Size of energy savings opportunity
 - Management commitment
 - Importance to the utility
 - Demonstrated learning organization

Continuous Energy Improvement (CEI)

CEI is an Energy Management System :

- *An energy management system (EnMS) is a holistic framework to understand, control, and improve energy use throughout the organization.*

Process of CEI

Assess current energy management practices

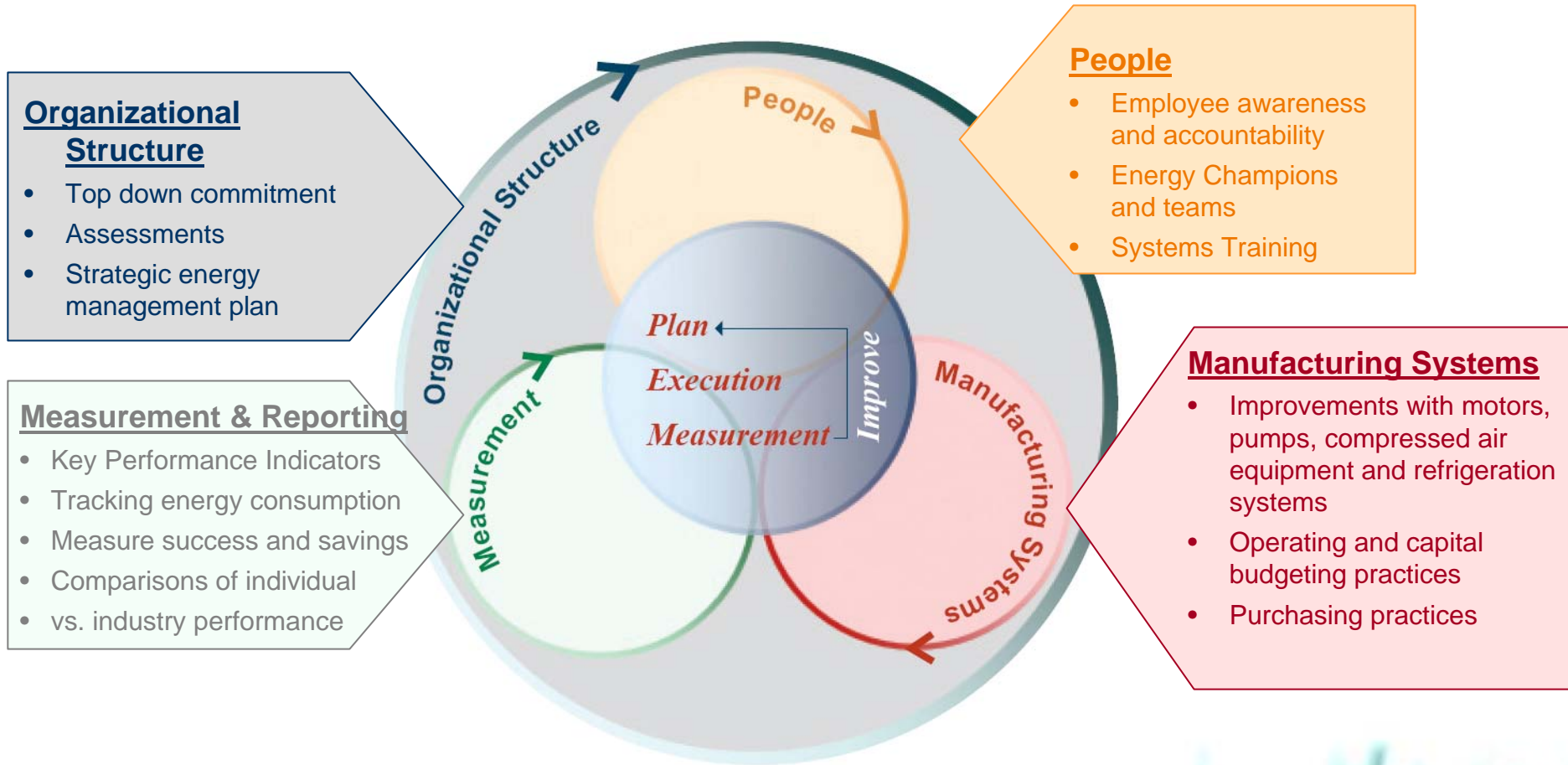
Commit to continuous energy improvement

Plan a strategic approach to energy

Execute the energy management plan

Measure and evaluate progress

The Elements of CEI



CEI levels of maturity

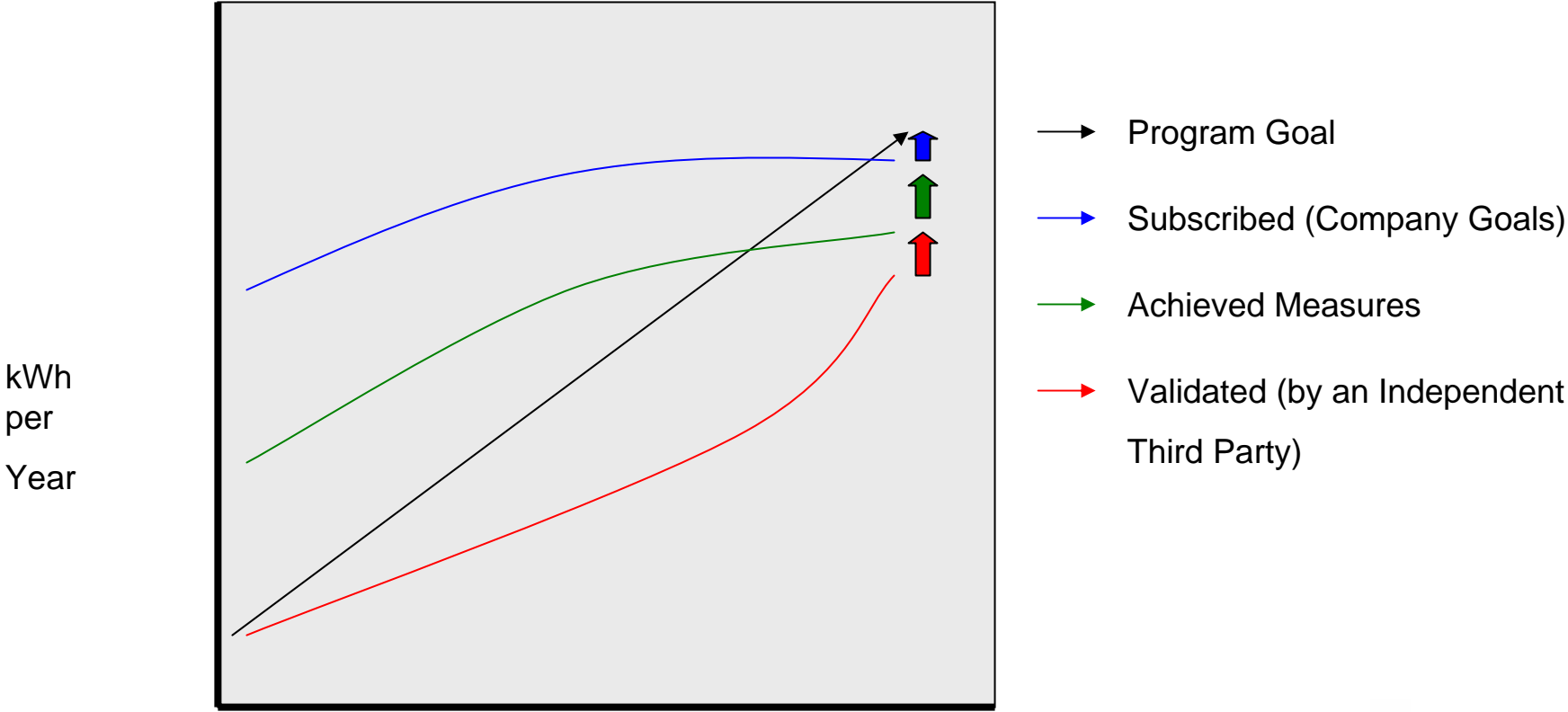
- Level One *Aware*
- Level Two *Engaged*
- Level Three *Committed*
- Level Four *Practicing*
- Level Five *Sustaining*

Program Evaluation

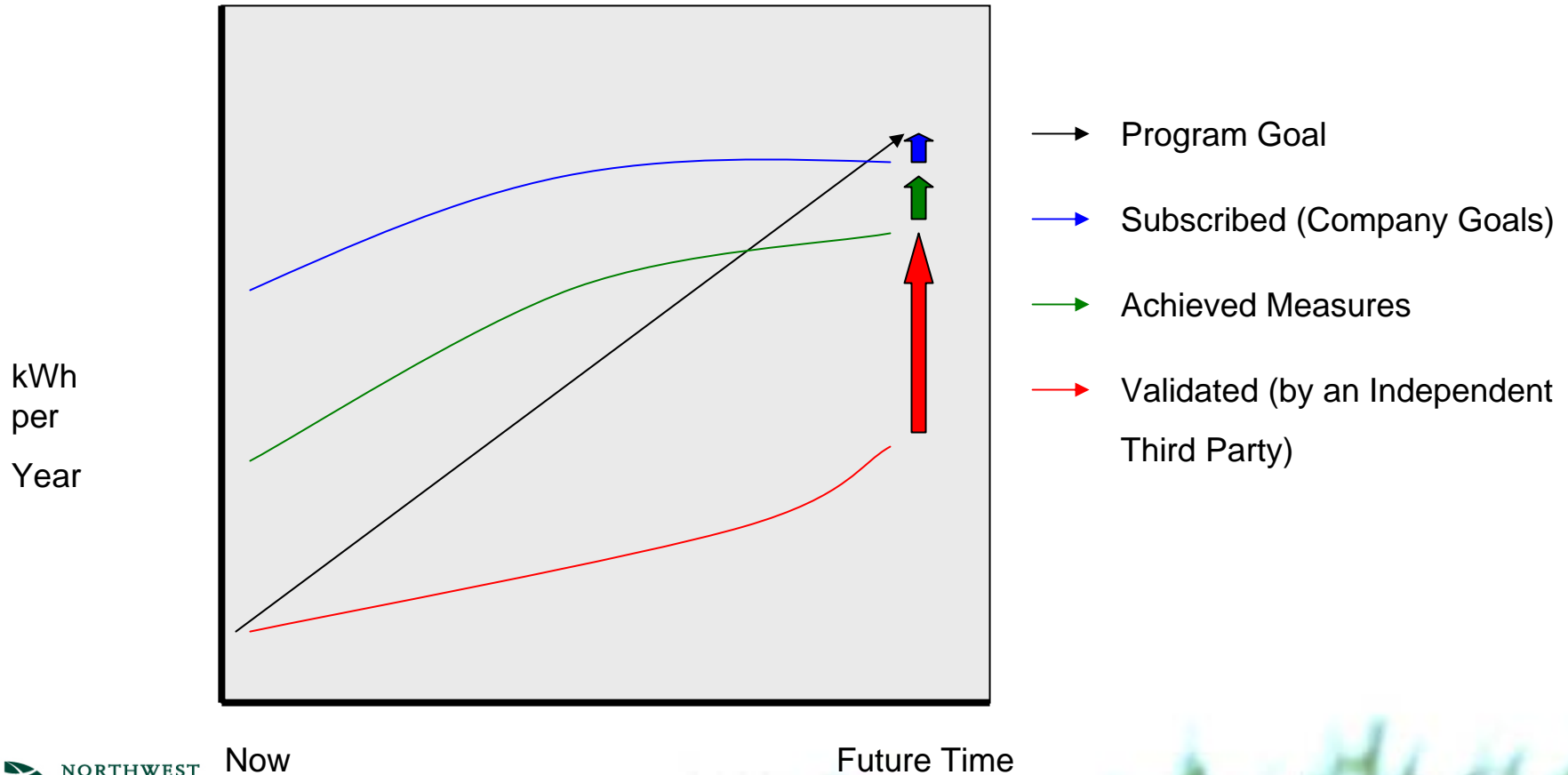
NEEA Evaluation Guidelines

- Validation – Not M&V
- Estimate (Conservatively)
- Independent, third party contractor
- Quality Assurance
 - for the initiative
 - for the facility
 - on behalf of the utility

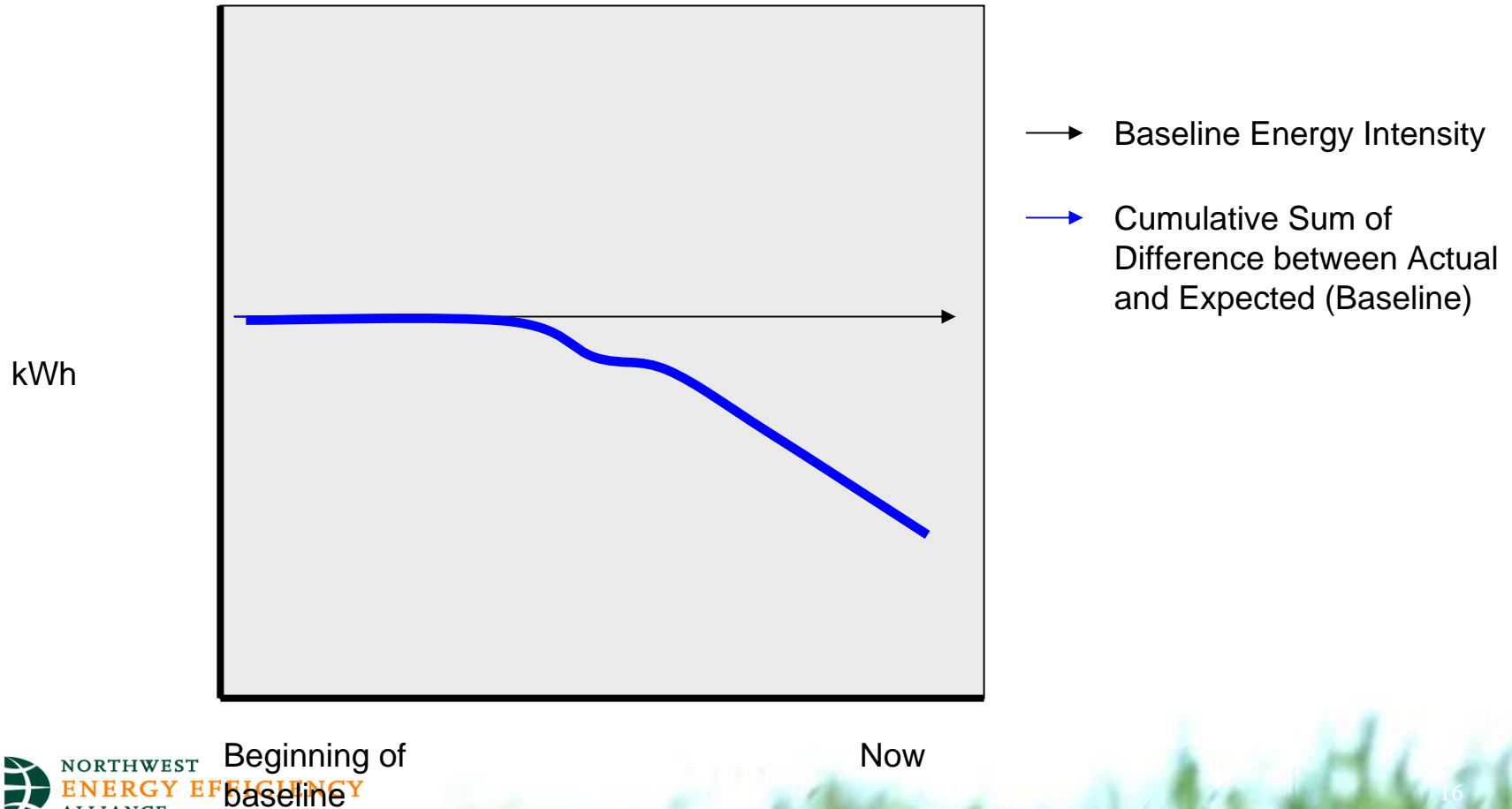
Savings Validation Process



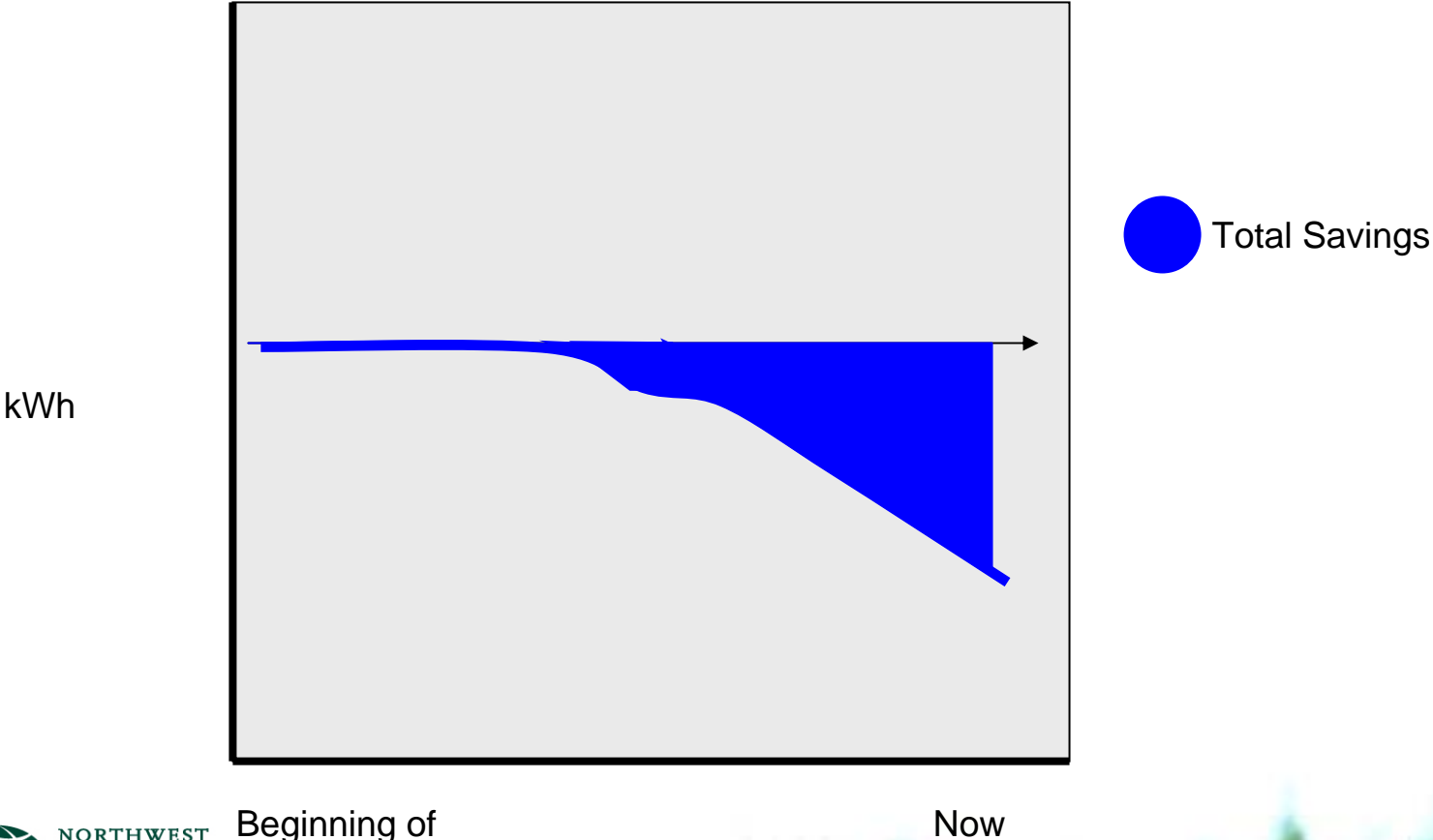
Rob's Nightmare



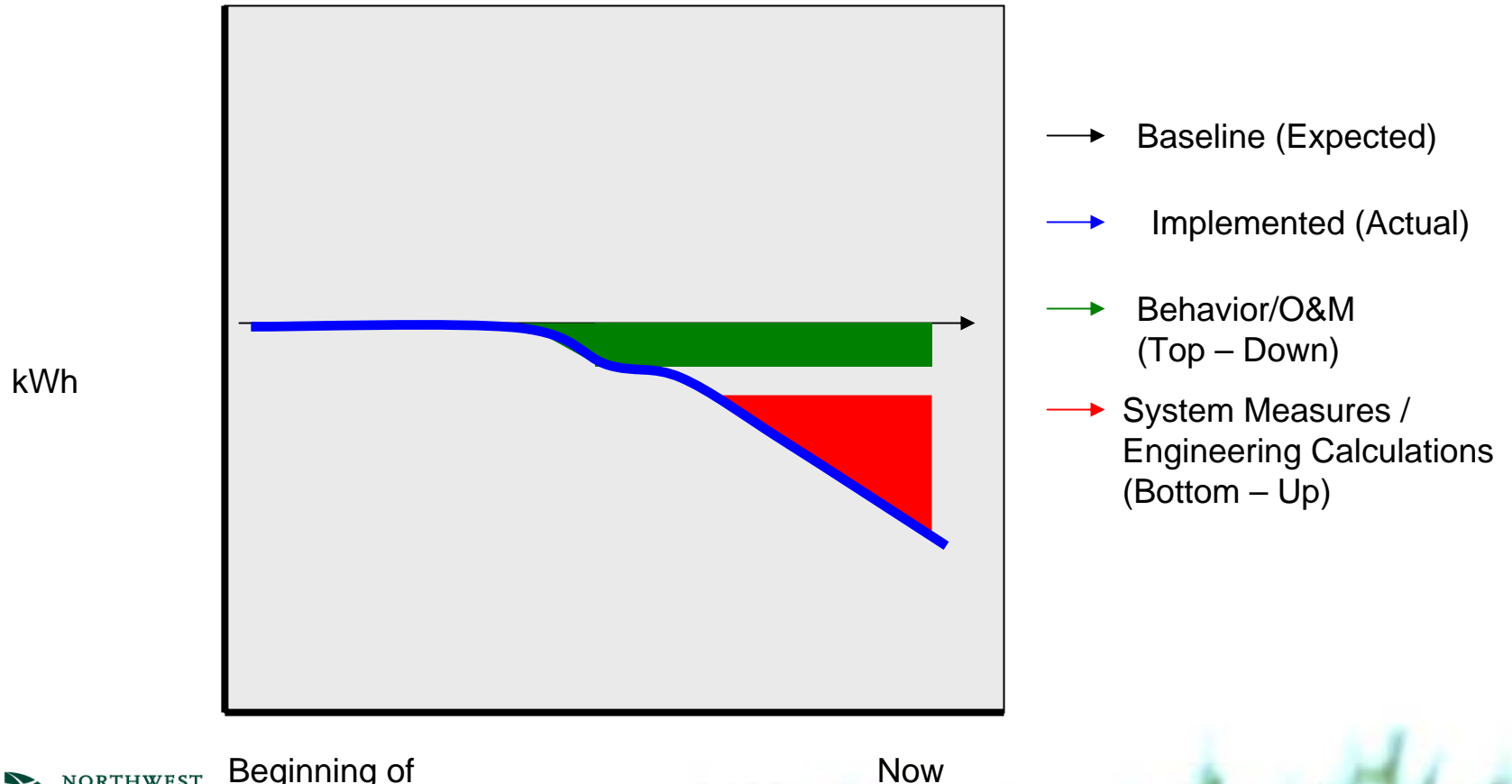
Spotting Trends with Immediately Available Information



Program Savings: Total Savings



Combining Approaches: Bottom-up and Top-down



Remaining Issues

- Naturally Occurring Conservation
 - Free ridership
 - Curtailment
- Attribution
- Measure Life / Persistence

Results and Learnings

CEI Program Results

Facilities	Engaged	Practicing	2009 Goal
Food Processing	34	26	<i>20% of large food processors practicing</i>
Pulp and Paper	11	4	<i>10 mills practicing</i>

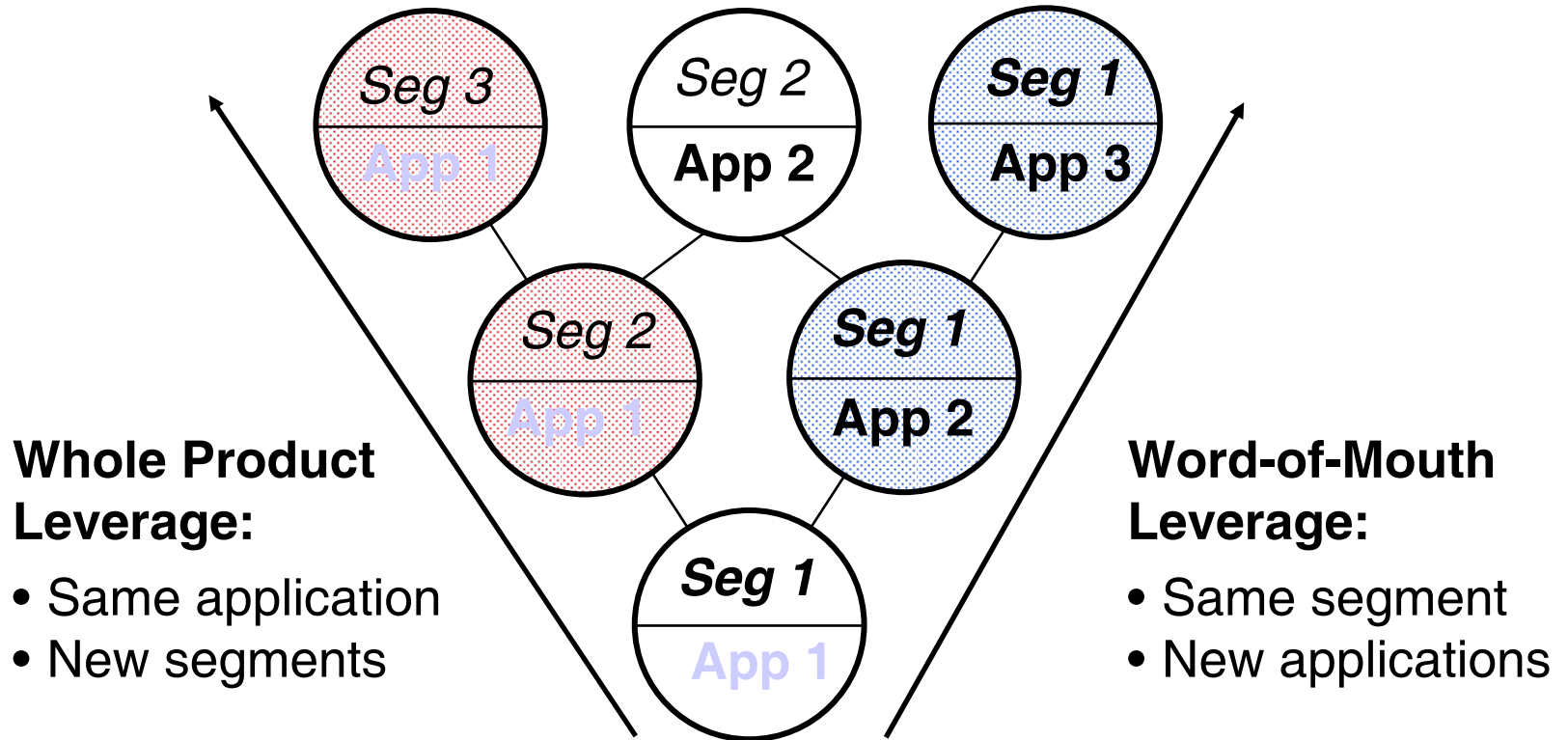
Key Learnings

- CEI depends on a few things:
 - *Trade organizations can accelerate top management commitment and participation.*
 - *Business conditions provide critical context for plant readiness.*
 - *Organizational resources and structure are critical.*

Going Forward

Market expansion
Standards

Market Expansion



Leverage is the key

Energy Management Systems today:

- Larger industrial firms developing energy management practices.
- Energy consulting companies, utilities, and others offering programs in energy management.
- **ANSI MSE 2000:2008** is available as a *standard* in energy management systems.
- **ISO 50001** in development due 2011.

Q & A



Thank You
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