

Fostering Manufacturer Collaboration through the SEEA Industrial Coalition

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ABSTRACT

Southeast manufacturers, utilities, and other stakeholders have partnered together to form the Southeast Energy Efficiency Alliance (SEEA) Industrial Coalition. The SEEA Industrial Coalition effort was formed as a key outcome of the U.S. Department of Energy (DOE) Industrial Technologies Program's (ITP's) regional summit to address energy efficiency in the manufacturing sector held at Oak Ridge National Laboratory (ORNL) in June 2008.

SEEA holds quarterly stakeholder meetings to help deliver energy efficiency resources to manufacturers in the Southeast. The members have found great value in being able to leverage the existing successes and experiences of others in the region to drive energy efficiency implementation. The paper will highlight this Coalition model as demonstrating the benefits of real-time peer-to-peer regional exchange forums. In addition to information sharing, SEEA has offered its members a series of technology and resource-related webinar sessions to learn about support available outside of the SEEA network.

SEEA has succeeded in uniting the manufacturing sector and corresponding stakeholders across the Southeast to promote opportunities, techniques, and resources for achieving energy savings. The paper will focus on capturing the value that cross-sector, peer-to-peer regional coalitions offer and the emerging prevalence of these groups as a model for industrial energy efficiency information sharing. The paper topic directly aligns with the Summer Study theme of *Energy Productivity in Industry: Partners and Opportunities* offering a best practice strategy that works by capitalizing on regions that have shared energy challenges and promotes replication of the model to capitalize on similar opportunities in other regions.

Introduction

This paper highlights the unique activity taking place in the Southeastern United States to unite regional manufacturers, utilities, and other stakeholders into a collaborative effort focused on advancing industrial energy efficiency. The effort is managed by the Southeast Energy Efficiency Alliance (SEEA) and is promoted as the SEEA Industrial Coalition. The scope of this paper will cover the program's goals, tactics for achieving them, and key results of the collaborative. Additionally, the formation of the program will be addressed in an effort to promote the establishment of similarly beneficial efforts in other geographic areas of the country.

Southeast Energy Efficiency Alliance

SEEA is a regional energy efficiency organization and serves as the program manager for the SEEA Industrial Coalition initiative. Overall, SEEA promotes energy efficiency for a cleaner environment, a more prosperous economy, and a higher quality of life in the Southeastern region of the United States. SEEA's goals are as follows:

- Position energy efficiency as a viable tool for strengthening the regional economy and protecting the environment.
- Educate and empower energy consumers on the benefits of energy efficiency.
- Cultivate partnerships, build networks and assist in the development of resources to support energy efficiency in the region.

SEEA also works to help achieve greater acceptance of energy efficiency as a legitimate energy resource, along with continued generation and transmission additions, in meeting energy demand.

Energy and Economy in the Southeast's Manufacturing Sector

Accounting for 12 percent of the region's GDP and employing nearly 3 million workers as of 2009, the Southeast's¹ manufacturing sector plays a vital role in the region's economy (BEA 2009). The Southeast's industrial sector accounts for 29 percent of total energy consumed by industry in the United States (EIA Consumption 2008). The annual growth rate for industrial GDP was 10 percent higher in the Southeast than the national average over the 2002-2007 timeframe (Census Bureau 2007; Census Bureau 2002). However, energy consumption per dollar of GDP is 17 percent higher in the Southeast than the national average (EIA Expenditures 2008; BEA 2008). Energy consumption is outpacing industry growth, creating the opportunity to improve efficiency, leading to reduced energy costs per output, increased productivity, improved competitiveness, and job creation or retention. At the same time, achieving improvements in energy efficiency can balance the need for new utility resources in the region and help to better manage power generation.

Regardless of the benefits of greater industrial energy efficiency in the region, there are several barriers that block a quick path to achievement. These primary, sector-specific barriers include relatively low power costs that negatively affect payback periods, limited utility and state level program support for industrial energy efficiency, and vast variability in energy profiles of manufacturers in the region. Furthermore, targeted communication about energy efficiency opportunities to manufacturers is challenging due to the inherent fragmentation of the sector and difficulty reaching the right stakeholders and decision-makers at each firm. Communication from industry back to utilities and policy makers is likewise disjointed so industry needs are not always captured and acted upon. Although many large energy users are accustomed to benchmarking within their own systems and occasionally within their industry classification, there has not been a region-wide cross-sector opportunity for collaboration.

DOE Helps to Forge the SEEA Industrial Coalition

The U.S. Department of Energy's Industrial Technologies Program (ITP) held the first in a series of regional industrial energy efficiency summits in the Southeast region. In June of 2008, several regional manufacturers and other public and private sector stakeholders met at Oak Ridge

¹ The Southeast will in this case be defined as the states, Alabama, Arkansas, Louisiana, Mississippi, Tennessee, Florida, Kentucky, West Virginia, Virginia, North Carolina, South Carolina, and Georgia.

National Laboratory (ORNL) to discuss strategies for advancing industrial energy efficiency in the Southeast. Among other key outcomes of the Summit was the determination that there would be value in regional stakeholders meeting regularly to continue the momentum of the event. SEEA stepped forward to become the managing body to oversee the development and sustainment of this collaborative effort. The coalition's initial objectives focused on technologies, policy drivers, and communication tactics to raise awareness for energy efficiency opportunities within the sector. In response to industry needs, the program became centered on peer-to-peer best practice sharing, adding value to the current program landscape by elevating success stories for the benefit of all manufacturers. From this initial framework, the SEEA Industrial Coalition was created.

Today, the SEEA Industrial Coalition is a unique collaborative effort that brings together industries, utilities, state energy offices, industrial assessment centers, national laboratories, and regional organizations to help the industrial sector sustain and improve growth by operating with a higher degree of energy efficiency. The Industrial Coalition serves as a forum to exchange best practices and a platform to foster education. Participants seek to deliver a coherent advocacy voice for Southeastern industries in order to support their energy and environmental planning, as well as recognize achievements in energy efficiency.

The SEEA Industrial Coalition works to drive regional industrial energy efficiency improvements by:

- Connecting industry to public and private financial and technical resources
- Fostering cooperation among industrial users, utilities and state and federal regulators, decision makers, and other agencies
- Identifying new technology needs
- Engaging university and national laboratory resources to develop, demonstrate, and deploy breakthrough technologies
- Establishing a strong base of actively engaged companies from which to accelerate measureable and significant improvements in plant energy efficiency in the Southeast

The immediate tactical goals of the SEEA Industrial Coalition center on uniting manufacturing companies in a cross-sector, peer-to-peer network to drive implementation of energy savings projects and drive the use of continuous energy management techniques throughout the region. The program has the broad goal of building a greater awareness for industrial energy efficiency opportunities to promote the creation of strong utility- and state-level programs which will generate long-term support for the delivery of energy programs that are designed for industry. Additionally, by regularly bringing together a large group of the region's top energy consumers, the SEEA Industrial Coalition can serve as the much-needed conduit for broader communications to and within the manufacturing sector.

Regional Peer-to-Peer Dialogues

To deliver on the goals of the SEEA Industrial Coalition, SEEA has developed a model for quarterly stakeholder meetings that focuses on manufacturer collaboration and regional market transformation. These meetings are held in locations that rotate around the region and, when possible, are held at manufacturing facilities in a showcase setting that provides demonstrations of implemented technologies and the opportunity for participants to offer real time feedback on

observations at the plant. Nissan, Shaw Industries, Bridgestone, and Cree have all hosted Coalition meetings at their respective facilities. The remaining meetings have been held in larger, centralized cities and hosted by Coalition stakeholders such as Georgia Tech, Tennessee Valley Authority (TVA), GE Energy, ORNL, and Alabama Power Company (APC).

The principle value of the SEEA Industrial Coalition meetings is to provide manufacturers with an open forum that facilitates the ongoing exchange of detailed information about project implementation and best practices in pursuing energy savings opportunities. For each meeting, SEEA prepares an agenda to address key financial or technical resource availability, policy opportunities, breakthrough technologies, and case studies. The participating manufacturers have expressed an interest in using this live meeting format to work with and learn from one another. To maximize the amount of collaboration per session, SEEA has identified and employed specific tactics such as a round robin and best practice panel discussions that effectively elicit a high level of interaction between participants during these sessions and that also ensure follow up communication beyond the regular meetings.

A 'round robin' type activity opens each SEEA Industrial Coalition meeting and offers the manufacturers in attendance an opportunity to make brief announcements about recent projects, hurdles they are facing, project successes, and overall energy management strategies. Over time, participating energy managers have begun using the round robin as an opportunity to ask fellow attendees specific questions, spurring a real time exchange of information. This activity is an ideal start to each SEEA Industrial Coalition meeting as it sets the stage for open collaboration and communication between participants. SEEA captures key points from these dialogues and identifies presenters for future meetings that can address the interests of the manufacturing attendees. When unique projects or best practices draw significant follow up discussion during the round robin activity, those manufacturers are then invited to discuss the specific project or practice in greater detail in a panel discussion format at a future meeting. This activity centers on the program goal to elevate successful projects and highlight best practices between companies in an efficient and effective manner. The overall format of the SEEA Industrial Coalition meetings is intentionally designed to be open so that real time follow up discussion among the group members is encouraged. The most active participants are familiar with the format to the point that immediate questions and spontaneous discussions are a norm throughout the meeting.

To accent this already high level of communication, a designated networking break is planned and lunch is intentionally left open so that participants can connect and exchange information. Even during this time slot on the agenda that could be considered 'downtime', there is a focus on arranging conversations and connections. For instance, as ITP was enlisting companies to sign the *Save Energy Now* LEADER Pledge, SEEA used the open networking times at meetings to connect would-be participants with companies who had already signed the Pledge. A particular topic of interest was why LEADER Companies were signing the Pledge, how they incited management interest, and how they planned to take advantage of the program resources. This tactic of encouraging peer referrals directly bolstered support for the program and speaks to the power of industry peer networks that SEEA is harnessing.

While no specific awards or recognition program is currently underway, overall validation of manufacturer achievements is an important aspect of the SEEA Industrial Coalition activities. The Coalition meetings provide an opportunity to broadcast individual company efforts in driving energy efficiency. SEEA believes that there is great value in providing an outlet for peer recognition. Once again, the inherent nature of a peer-driven environment inspires energy managers to push their own firms to keep up with the others in the Coalition program. Within the

industrial sector, competitive challenges have been found to yield high interest in participation and successful results.

Enhancing the Regional Collaborative

The development of the live meeting format was SEEA's initial focus. With the model proven over several successful meetings, SEEA has recently turned its attention to identifying ways it can further enhance the collaborative experience and enhance communication among participants. Resource and technology focused webcasts are used to deliver information to participants. Additionally, news and opportunities relevant to the region are communicated to the group in a very precise way so as not to over saturate the constituents with email blasts. In 2011, SEEA is working to introduce the following enhancements to the collaborative: an energy manager's Q&A to highlight common questions among participants, a series of technology briefs relevant to Southeast industry, a best practice report series to capture quick and low cost opportunities for energy savings, and a manufacturer profile series to capture information about participants' energy management programs.

Market Transformation

The SEEA Industrial Coalition unites all relevant stakeholders (manufacturers, utilities, state energy offices, etc.) at once, making it an excellent forum to address and discuss current issues and specific needs of the manufacturing sector with the ear of those who can directly assist. Figure 1 displays the manufacturing and stakeholder participants that have engaged in the SEEA Industrial Coalition. While encouraging manufacturers to share best practices, the SEEA Industrial Coalition also provides the opportunity for states, utilities and other programs to network and talk about successful programs and resources. For example, one of the SEEA Industrial Coalition meetings was held at APC's Technology Application Center. This resource provides research assistance for APC's industrial customers and also showcases several products for head to head comparison and evaluation. After a tour of the facility, several firms outside of the APC territory began petitioning their utility representatives for this type of resource – a request that might not have otherwise been voiced had the resource not been discovered.

By design, the SEEA Industrial Coalition pulls stakeholders out of their individual silos to set the stage for maximum leveraging of resources. By showcasing successes that were driven solely by a manufacturer, states and utilities will get a first-hand look at how they can design programs to support these projects in the future. The ideal end result is a more profound change throughout the entire support and delivery system, with a shortened program design lead time and a faster path to implementation.

Figure 1: SEEA Industrial Coalition Participants to Date²

<u>MANUFACTURING PARTICIPANTS</u>		<u>STAKEHOLDER PARTICIPANTS</u>	
3M Automotive Division	Mannington	Abundant Power	Ingersoll Rand
Agrium	McKee Foods	ACEEE	Kendall Electric
Alcoa Inc	MeadWestvaco Corp.	Advanced Energy	Kentucky Pollution Prevention Center
B.F. Goodrich	Michelin	Advantage Energy, Inc	Kilowatt Energy Savers, Inc
Baldor Electric Company	Miura Boiler	Air Center of Mississippi	Lockheed Martin
Beaulieu	Mohawk	Alabama Power	MARSPEC - Marine Specialty
Boeing Manufacturing	Mosaic Company	Alabama Technology Network	Mississippi Development Authority
Bridgestone	Navistar, Inc	ARCADIS	Mississippi Power
CalsonicKansei	Nissan North America (MS)	Atmos Energy Corporation	Mississippi State University IAC
Cemex	Nissan North America (TN)	BCS	NAIMA
Cooper Lighting Manufacturing	ORBIS Corporation	Bremer Energy	NC State University IAC
Cooper Tire & Rubber	Phifer	Carrier	Oak Ridge Energy Corridor
Cree LED	RockTenn	Colfax Americas	Oak Ridge National Lab
Delphi Automotive, LLC	SABIC Innovative Plastics	Cooper Lighting	Oglethorpe Power
Eastman Chemical Company	Schneider Electric	Duke Energy	Osram Sylvania
Flexsteel Industries, Inc.	Shaw Industries	Ecos Consulting	Pathway Lending
Franklin Furniture	Showa Best Glove Company	Entergy	Precision Energy Solutions
Fuji Film Hunt Chemical	Spirax Sarco	EPA Energy Star for Industry	Servidyne
General Electric	Toyota Manufacturing	GE Energy	Siemens
Holcim	Viking Range	GEFA	Southern Company
Honda Manufacturing	Wayne Farms	Georgia Tech University	State of TN
Hyundai Manufacturing	Wellman Inc	Geothermal Energy Systems	TN Tech University IAC
Johnson Controls	Yates Services - Nissan MS	Global Energy & Lighting	TVA
Laurel Machine & Foundry Co.	Yates Services - Nissan TN	Griffith Engineering	University of Alabama IAC
LP Building Products	Zodiac Aerospace	Hydro-Thermal	US Department of Energy

Program Results to Date

Over the short life of the program, the SEEA Industrial Coalition has seen participation from over fifty different Southeastern manufacturers and sixty other stakeholders. Attendance at the peer-to-peer meetings continues to grow, with the average attendance around eighty; manufacturers in the group have been actively making referrals to other firms in order to deepen the pool for collaboration. The peer-to-peer nature of the Coalition leads to deep relationships that carry on between the companies beyond the quarterly meetings.

Participating manufacturers have communicated several benefits and value resulting from their participation in the SEEA Industrial Coalition. Figure 2 highlights some of the testimonials that the SEEA Industrial Coalition has received. Firms are learning new tactics to manage energy at both the corporate and plant levels. A specific topic that has been consistently discussed is employee engagement in energy efficiency. During a Coalition meeting round robin activity, Eastman mentioned their interest in hosting an Energy Fair. As a result, Nissan invited them to attend their employee energy fair to help Eastman in the development of their own event aimed at advancing employee engagement. Project financing is frequently discussed with companies

² As of 3/1/2011.

sharing experiences about how energy projects were positioned internally to achieve ROI and payback period hurdles and ultimately gain capital funding.

An unanticipated result that has been noted from several companies is the value in exchanging qualified vendor references between manufacturers. This information sharing allows for vendor selection decisions to be made more rapidly, resulting in projects that are successfully implemented in a faster timeline.

Figure 2: Industry Testimonials – SEEA Industrial Coalition

“Nissan consistently benefits from attending the SEEA Coalition meetings by collaboration, networking and sharing best practice information. We are always looking for opportunities to benchmark energy efficiency ideas with industrial partners within our region”

– Mike Clemmer, *Paint Plant Manager & Sub-Leader of the NNA Energy Team, Nissan North America*

“At a SEEA Industrial Coalition meeting during 2010, Eastman learned about several consultants that other firms worked with and subsequently hired one of them to assess a long-standing problem and make recommendations. The trusted recommendation from companies in the SEEA Industrial Coalition allowed us to confidently make a timely decision on which consultant to use and has directly resulted in improved efficiency and reduced costs,”

– Sharon Nolen, *Manager – Corporate Energy Program, Eastman Chemical Company*

“Toyota values the unique opportunity to interact and benchmark with other energy management programs. The content discussed at Coalition meetings also helps us to support our supplier energy management training program”

– Ron Jones, *Toyota Motor Engineering & Manufacturing North America*

"For SABIC Innovative Plastics, the SEEA Industrial Coalition provides solid networking opportunities with our industrial energy counterparts, free flowing ideas and value-add technical information that is immediately impactful to our plants, and benchmarking opportunities so critical to faster decision making SEEA has had a "catalytic" impact on several of our energy projects and efforts.

Elevation of project ideas and concepts during quarterly meetings provide a catalyst for project implementation. Several companies note that stagnant project concepts are revisited, or completely new project are conceived, as a direct outcome of information gained during a SEEA meeting. Additionally, firms are being linked to key resources such as regional Industrial Assessment Centers and *Save Energy Now* assessments, the LEADER initiative and Superior Energy Performance demonstration projects available through ITP, EPA’s ENERGY STAR® Challenge for Industry, and unique new utility programs. Meanwhile, the utility stakeholders are getting a unique opportunity to understand their customers’ energy efficiency needs better and design programs accordingly.

Conclusion

Creating the SEEA Industrial Coalition program has required significant time and effort dedicated to networking and relationship building with attention to locating the correct contact within a manufacturing company. For this reason, a regional energy efficiency organization like SEEA has the proper alignment of goals and strengths to carry out the task. By leveraging relationships with utilities and other stakeholders, SEEA has been successful in uniting manufacturers and corresponding stakeholders in the Southeast with one another, opening much-needed lines of communication, creating a cross-sector opportunity for collaboration, and also promoting opportunities, techniques, and resources for achieving energy savings. The participating manufacturers have found great value in being able to learn about the experiences of others in the region in order to drive their own energy efficiency implementation. The utilities and other stakeholders value the opportunity to have real-time discussions with manufacturers, which is helping to bolster the creation of resources and programs to support energy improvements. The long term benefits of SEEA's cross-sector, peer-to-peer regional coalition effort will continue to be realized as regional firms implement the projects and practices learned through participating in the program and use the unique collaborative effort to help themselves, by also helping each other, achieve greater levels of energy efficiency. In addition to affecting change in the Southeastern United States, SEEA looks to help other regions in the U.S. replicate this model approach in the future.

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