

Improving Energy Productivity through Engagement with State Manufacturing Extension Partnerships

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ABSTRACT

The Small-to-Medium Business (SMB) segment has been a difficult group to engage in energy efficiency offerings from government agencies, utilities, and other program administrators. SMBs make up 25% of global industrial energy use, but because they fall between the program approaches of mass market residential/commercial and customized large industrial, they have been underserved in the energy efficiency market. The Northwest Energy Efficiency Alliance (NEEA) has begun expanding approaches in the SMB segment through a number of efforts, focusing in particular on working with the Manufacturing Extension Partnerships (MEPs) of Idaho, Montana, Oregon and Washington to engage SMBs. The MEPs obtain funding from a variety of sources such as universities, state offices, and federal offices to improve the effectiveness of their SMB customers with a primary focus on waste reduction (e.g. following Lean principles), product quality, and productivity. Through their engagements the MEPs develop a deep understanding of their customers' drivers. NEEA's MEP Support Project seeks to improve energy productivity in the SMB segment by providing energy training and technical support to the MEP consultant engineers. This paper will provide a status of the project, including findings from engaging with the non-profit MEP organizations, approaches to energy productivity improvements, and potential areas for future development.

Introduction

This paper provides a brief introduction to the Northwest SMB segment and shows how engagement with MEPs can improve energy efficiency in this underserved segment. In 2010, the United Nations Industrial Development Organization (UNIDO) stated that SMBs account for 25% of industrial energy use and an even greater proportion of energy savings opportunities; but energy efficiency program administrators have not developed cost effective models to support SMBs. To address this challenge NEEA engaged the Northwest MEPs, which currently provide the SMB segment with consultative services closely aligned with managing energy as a controllable value stream. The Northwest MEPs consist of Idaho TechHelp (TechHelp), Montana Manufacturing Extension Center (MMEC), Oregon Manufacturing Extension Partnership (OMEP), and Impact Washington (Impact). The findings from this project should inform future energy efficiency engagements within the SMB segment and with MEPs, for program administrators in the Northwest and across the nation.

Background on Manufacturing Extension Partnerships and the Northwest Energy Efficiency Landscape

The Northwest has a rich history of small manufacturing firms growing into billion dollar corporations, including such well-known manufacturers as Boeing, Precision Castparts, Simplot, and Weyerhaeuser. The Northwest MEPs help small manufacturers to be more competitive so that they can grow and support the region. The Northwest energy efficiency industry consists of a variety of non-profits, trade allies, and consulting companies and has produced cost-effective savings, growth, and innovation that have enable businesses of all sizes to achieve their energy efficiency goals.

NIST MEP Program

The National Institute of Standards and Technology (NIST), a non-regulatory agency of the US Department of Commerce, unites a program network of MEPs with over 1,400 technical experts in the fifty states to provide a variety of services that range from innovation strategies to process improvements to green manufacturing for small to mid-sized US manufacturers. The effort is a public/private partnership that combines federal funding with investments from other parties as well as from the manufacturers who receive MEP consulting support.

Each state is supported by one or more MEP organization, each of which has a unique combination of local customer make-up, services offered, business model, consultant skill set, and organization goals. Table 1 provides an example of some of the variety seen across MEP organizations.

Table 1. MEP Organizations Variety

Aspect	Range Across Each Aspect
Local Customer Make-up	<ul style="list-style-type: none"> • Large cities with heavy industrial focus • Mix of small and mid-sized manufacturers • Mostly small manufacturers with emphasis on agriculture-related services
Services	<ul style="list-style-type: none"> • Account management with minimal direct consulting; most of consulting outsourced • All-in-one services, where MEP consultants provide expertise in multiple areas • Specialists, where MEP consultants have areas of expertise in which they focus and collaborate with one another
Business Model	<ul style="list-style-type: none"> • Funding by state governor’s office • Funding through a university extension • Funding as a non-profit organization
Consultant Skill Set	<ul style="list-style-type: none"> • Business process optimization • Operations management and Industrial Engineering (IE) • Energy-related or other engineering
Organization Goals	<ul style="list-style-type: none"> • Providing more solutions to existing customers • Expanding customers or channels to include other groups such as utilities or other energy efficiency program administrators

This variety makes MEP engagement using a flexible approach the preferred method over “one size fits all.” A successful engagement will appropriately address key MEP organization priorities, the realities of MEP customers and MEP engagements, and MEP consultant backgrounds and approaches.

There are four Northwest MEP organizations:

- Idaho TechHelp has a mandate from the US Government and the State of Idaho to help build Idaho's manufacturing sector by providing cutting edge technical assistance, training, and information. Their team of experts provides solutions in areas such as waste reduction using Lean Enterprise, driving sales with product development and rapid prototyping, and improving quality through ISO 9001 and Six Sigma management systems. TechHelp is headquartered at Boise State University and has offices in Pocatello as well as in the Idaho panhandle. In 2007 TechHelp reported \$65 million of positive financial impact through their work for their customers. TechHelp employs four manufacturing specialists and five new product development specialists.
- Montana Manufacturing Extension Center (MMEC) is a statewide manufacturing outreach and assistance center staffed by full-time professionals who have degrees in engineering as well as extensive manufacturing and business experience in a variety of industries. Respondents to evaluation surveys reported that MMEC efforts in 2006 and the first half of 2007 resulted in 371 new or retained manufacturing jobs, with a total dollar impact of \$14.5 million in the state. MMEC employs five field engineers across Montana with an additional person focused on energy efficiency opportunities.
- Oregon Manufacturing Extension Partnership (OMEP) is strategically affiliated with the Oregon Institute of Technology (OIT) and is a partner with Business Oregon as well as other industry associations and business consortia. OMEP uses Lean Enterprise as the basis for their manufacturing consulting and training efforts. From October 1, 2008 to September 30, 2010 OMEP's efforts resulted in 2,054 jobs created or retained and cost savings of over \$22 million. OMEP employs eleven consultants to serve their customers.
- Impact Washington (Impact) is a private non-profit that is not affiliated with a university, and offsets operating costs with state and federal funding. Impact's mission is to strengthen manufacturing in Washington, focusing their efforts on increasing profit, developing employee skills, and improving sustainability. Impact has six project managers and utilizes a variety of subcontractors, including the Washington State Department of Ecology, to serve their customers.

In recent years the four Northwest MEP organizations have collaborated on various projects where their proximity and mix of skills have combined to deliver high value solutions to their customers.

Northwest Energy Efficiency Landscape

For thirty years, the Northwest has fostered noteworthy energy efficiency (EE) accomplishments, producing energy savings equal to the output of two Columbia River dams. Many of these results can be attributed to the Northwest Power Act (1980) that established the Northwest Power and Conservation Council (Council), a group that develops the energy load growth plans for the region. In their most recent update to the regional plan, the Council anticipated eighty percent of load growth will be met by energy efficiency in the next twenty years. This plan informs and shapes the efforts of the numerous energy efficiency program

administrators for the region, including utilities, Bonneville Power Administration (BPA), and the Energy Trust of Oregon (Energy Trust).

Within the northwest, EE program administrators have been successful in delivering on the targets established by the Council, with 2009 energy savings of 981,120,000 kWh delivered across the region. Over half of the reported savings came from the residential sector, with commercial, industrial and agricultural following in decreasing order. As in other parts of the country, Northwest program administrators focus the delivery of savings by prescriptive measures for specific customer sectors, such as residential or commercial. Just as private businesses use different sales channels to reach segmented customers, utilities and public benefits administrators use a variety of delivery mechanisms to engage their customers.

Program administrators in the northwest and across the US have not effectively supported the SMB segment. It is not cost effective to apply consultative resources to the small facilities of this group, but at the same time a mass market approach does not deliver the level of service and support needed to produce the desired long-term energy efficiency solutions that are required by the regional power plan. Some program administrators have begun to innovate with specific approaches, such as Energy Trust's Small Industrial offering that includes simplified forms for smaller projects and online Tips for Saving Energy, but across the region there have not been targeted outreach programs for smaller industrial opportunities.

Recently, the Northwest Energy Efficiency Alliance (NEEA) has gained traction in the industrial sector, with proven results in taking the concepts of Strategic Energy Management (SEM) into medium-to-large businesses under the brand name Continuous Energy Improvement (CEI). This demonstration project has led to Northwest energy efficiency program administrators, Energy Trust and BPA, embracing SEM and adding SEM services to their portfolio of offerings. In addition, NEEA industrial staff has recognized the challenge faced by utilities and benefits administrators in delivering energy efficiency services to the SMB segment and has launched an initiative to address these issues. One of the issues is the lack of "right-sized" consultants who can assist SMB companies with their energy efficiency opportunities. To fill this gap NEEA initiated conversations with OMEP to establish the shared goal of looking for opportunities to collaborate. In the summer of 2010, NEEA issued a Request for Proposal (RFP) to launch the MEP Support Project, an 18-month effort that will end in December of 2011.

Northwest MEP Support Project

The main goal for the Northwest MEP Support Project is to enhance awareness of energy efficiency in a group of service providers that routinely interact with small and medium manufacturing businesses in the Northwest. This project aims to engage MEPs in the Northwest to deliver strategic energy management practices that result in a quantifiable reduction in energy intensity to the firms with which they normally engage. Table 2 summarizes the main objectives of this project.

Table 2. Northwest MEP Support Project Goals

Goal	Description
Add strategic energy management consulting to the MEPs' Portfolio of Services	Develop and support the group of MEPs, consisting of approximately 37 MEP consultants on staff across the region. NEEA expects to train 75% of these consultants to enable them to deploy energy management practices at their clients' facilities.
Encourage SMBs to implement strategic energy management practices	Assist the SMB industrial organizations to implement strategic energy management. NEEA will track and report the facilities with which each MEP consultant engages in energy solutions, both the number locations as well as the level of success in implementing energy management practices. These engagements are estimated to occur in at least 48 facilities.
Attain cost-effective energy savings	Drive more than 4,400,000 kWh of cost-effective energy savings by the end of 2011. NEEA will assist the MEPs in recommending traditional utility program measures as well as operation and maintenance changes that result in embedded energy savings.
Document energy intensity quantification methodologies	Quantify the impacts of SEM engagement using a bracketed approach that includes "top-down" analysis of energy intensity changes as well as from the quantification of process improvements. The result will be a documented process for the MEP organizations to use to assist in determining savings from productivity changes or process improvements. NEEA can continue to develop this framework across additional facilities to drive greater results
Demonstrate market transformation of SMB industrial EE market	Demonstrate market transformation success for NEEA stakeholders from: <ul style="list-style-type: none"> • High penetration of SEM in the SMB industrial market. Concrete EE results from the combination of the SEM practices, the MEP delivery channel, and the focus on the SMB sector to clearly demonstrate a transformed market. • Quantifiable Savings. Through the use of appropriately rigorous energy savings documentation combined with technical support and development of saving estimation approaches for embedded energy calculation, NEEA will quantify savings that translate into industrial facility cost reductions. • Case Studies. NEEA will document key project success in case studies and use them to generate interest, identify real results achievable, and drive increasing numbers of participants.

By successfully achieving the project objectives, NEEA will gain reliable data that supports their funders' investments in SMB-related programs, as well as information on the types of EE savings measures that are effective in the Northwest SMB industrial segment. In addition, the project will provide guidance on effectively engaging the SMB market with viable EE opportunities and MEPs as EE market actors. These information streams will be combined into the business case that informs NEEA stakeholders' increased investment in SMB solutions.

A successful outcome for Northwest SMB customers is an increased number of programs that improve their energy productivity. These programs will be tailored to the customers' needs and brought to them by market agents, the MEP consultants, who understand their priorities and can tailor the solutions to specific business objectives and communication styles.

This project includes work with the MEPs in Oregon, Washington, Idaho, and Montana to deliver SEM practices that result in a quantifiable reduction in energy intensity at Northwest manufacturing facilities. The NEEA MEP Support Project Team (the Team) will meet the project objectives through a comprehensive engagement strategy as well as in-depth training and ongoing technical support of the MEPs.

Engagement

To be successful, this project requires thorough engagement of MEP organizations and related stakeholders. Beginning in the summer of 2010, the Team established relationships at all levels within each MEP organization. Early engagement work with the MEPs allowed each one to articulate their strategic directions and definitions of success and exposed motivations of executives to follow NIST federal initiatives, in particular E3 and pollution prevention standards. With this knowledge, the Team structured energy training as a segment of their larger initiative. Similarly, engagement at the consultant level revealed a robust understanding of their clients' financial constraints, which pushed the Team to emphasize many low-cost and no-cost energy solutions into the project.

The Team also defined stakeholders in each state to ensure appropriate engagement between the MEPs and their customers' local utilities, BPA, state energy offices, and third party implementers. The Team facilitated these engagements to ensure the project was well understood and all parties were well informed.

Training

The Team's training efforts have established the knowledge foundation to identify and drive energy savings measures. In the fall of 2010, training for MEPs kicked off for each state organization separately in a face-to-face, one-and a-half day event. The kick-off training provided foundational basics on energy, utility programs and relationships, and SEM. As part of the event, the Team demonstrated proper execution of an energy facility audit at a manufacturing customer site selected by each MEP.

Following the kick-off event, the Team launched recurring one hour webinars on common industrial equipment to augment lessons introduced during the first training. The list of webinars provided by the Team follows:

- Compressed Air Systems
- Lighting Technologies & Controls
- Motors and Drives: Premium Efficiency Motors and Variable Frequency Drives
- HVAC Refrigeration & Space Conditioning Technologies & Controls
- Control & Sequencing Strategies for Compressors, Pumps, Fans, Blowers, and Baghouses
- Proposing and Marketing Energy Saving Projects to Industrial Clients
- Energy Tools: Dataloggers & Metering Equipment
- Applying Energy Interval Data Analysis to Lean Manufacturing
- Embedded Energy for Lean Embedded Energy Concepts as they apply to Lean
- Two Sessions of MEP Sharing: in each session, two MEP consultants sharing their approaches and findings
- Advanced Energy Concepts Advanced Concepts: CEI/SEM, DR, others
- MEP Support Project Recap and Summary

Among the final webinars, two will be developed and presented by the MEPs to share success stories with their peers on advanced savings measures, savings from embedded energy,

and savings associated with lean manufacturing improvements. The depth of energy discussions MEPs will have with their customers as a result of this project will vary immensely from consultant to consultant.

Technical Support

To ingrain knowledge of EE practices within the MEP organizations, the Team launched a series of phone- and email-based outreach to each MEP consultant to address their challenges and needs, including SEM concepts, technical hurdles, or capturing ideas and best practices. In addition, the Team began support of energy savings quantification so that MEP consultants learn these practices and assist their customers in gaining support for project buy-in. On some occasions this work includes on-site technical assistance for complex and/or large projects. A marker of success will be SMB customers who can self-identify and quantify the impact of energy efficiency activities.

Many MEP practices address facility operation improvements resulting in energy savings that are difficult to quantify. To assist the MEP organizations in this quantification effort and to develop a mature methodology for this type of work, the Team initiated efforts to estimate the energy savings from operational changes. This work involved a combination of approaches including engineering analyses to estimate energy intensity, comparing current usage to baseline expectations. One outcome of this effort is a simple methodology that can be used in future customer engagements.

Non-traditional savings measures pose a huge opportunity for MEPs to add energy as a component of their current services. Utilities are also eager to capture embedded savings from processes improvements but struggle to prove the savings with the appropriate rigor to withstand utility board audits. A long-range goal of the MEPs and NEEA industrial staff is to overcome this quantification hurdle so that utilities are comfortable claiming embedded energy savings and may therefore provide incentives to manufacturers for such events.

Current State of the Northwest MEP Support Project

The NEEA MEP Support Project is entering its tenth month in April 2011. This section describes the major activities to date, the key learning and the status of energy savings pipeline. With each of the four MEP organizations, the Team conducted initial kick-off events that consisted of classroom-style training and hands-on energy audits. Given Impact Washington's strategic partnership with the Washington State Department of Ecology, the Team also provided a full day-and-a-half kick-off event for Ecology staff. Since then, the Team has held ten (10) webinars, provided monthly phone calls to all consultants, and supported seven (7) customer engagements with manufacturers.

Key Learnings

As the first engagement of its kind with MEPs, the Team has learned significant lessons ten months into the implementation. Key lessons can be roughly grouped into three main areas: training approach, utility engagement and project design & execution.

Training approach. The Team quickly refined the training emphasis from theoretical knowledge to include a more practical, hands-on approach. During the kick-off training events, the Team also identified the usefulness of real life examples. The classroom-style training was restructured as an in-depth case study for the onsite walkthrough of an MEP customer. As the training sessions were rolled out, additional work was done to integrate the customer information before each session; in addition, the classroom time was broken up from a continuous eight hour session followed by a walkthrough, into two four hour sessions around the walkthrough, so that the second class session would reference findings in the walkthrough.

Utility engagement. In addition to the training style changes, the Team increased utility representative involvement in the facility walkthrough and training. Utility representation increased from zero representatives in attendance at the initial training to three different utilities represented at the last major training. The utility representatives provided valuable background on the facilities, information on their energy usage, and the status of completed, in-process, and potential projects. The Team created tools to support utility involvement, such as a utility bill release form that facilities could use to authorize access of annual billing information essential for the Team to provide consultative guidance.

Additionally, inviting local utilities to the training events demonstrated a commitment to the MEP's work and built a working rapport between the utilities and the MEP staff. The Team engaged local utilities approximately a month in advance of each session to coordinate attendance, review training materials, and strategize on how the MEP organizations' engagement enhanced the relationship between the manufacturing firm and the serving utility.

Finally, as the MEP organizations have increased their work with their local utilities, there have been significant lessons learned in how the two groups work together. These lessons have been fundamentally driven by the missions of each group that affect how each group looks at its engagement in the project and with the manufacturing firms. The mission of the MEPs is to provide consultative services to make small-to-medium sized manufacturers more competitive. The mission of most utility industrial EE programs is to deliver industrial EE as a reliable and cost effective resource to ratepayers. While there is overlap between those missions that enables the relationship to be mutually beneficial, both groups need to understand the nuance of the missions for both to have clear expectations. The Team is developing guidance documents for the MEPs so that they can explain the nuances and requirements of the utility industrial EE programs to their manufacturing customers, resulting in greater alignment between the MEPs and the utilities.

Project design & execution. Each of the four MEP organizations engaged in this project has a similar mission, but each has a different organizational structure to meet their objectives. This is a challenge due to the fact that a program that works with them cannot be "one size fits all", but a configured approach that is adapted. To meet this challenge, the Team conducted multiple conference calls with each MEP's Executive Director to get an understanding of their unique requirements. Early on each of the MEP organizations designated an individual as the energy lead. This point person then participated in the planning calls.

The follow on planning calls centered on project efforts, MEP goals, and MEP vision of success, but did not go to the level of understanding the MEP's daily work or business model. For example, later during the initial training with Impact Washington, the Team was surprised to

learn more about Impact's business model in which their project managers build relationships rather than provide direct consulting services, so the technical approach of the training was not as applicable as in the other states.

Upon conclusion of the kick-off training the Team saw a temporary momentum loss as each MEP organization gathered to internally discuss how to incorporate energy into their specific business model. In response, the Team established a monthly Energy Leads conference call to share best practices, tools, and approaches among neighboring MEPs. The monthly calls have helped MEPs learn from one another as they navigate the energy efficiency industry, and this group is building momentum as each organization seeks to keep pace with the other.

Energy Savings Pipeline

As of June 2011, the Team has identified 990,900 kWh of potential energy savings measures across twenty-seven (27) of the MEP's customers. These measures are being actively developed and supported by the Team with the MEP consultants to drive the measures to completion and meet the goal of 4,400,000 kWh by end of 2011. To increase the the likelihood of meeting the energy savings goal, the Team shifted project resources towards the first half of 2011, to conduct additional webinar-based trainings as well as increase the calls towards each MEP Consultant. The Team anticipates that providing more technical and training support earlier will likely increase savings before the end of the MEP Support Project.

Future of Northwest MEP Support Project

Over the rest of 2011, the Northwest MEP Support Project is committed to drive energy savings as well as document the approaches and findings of the project so that EE program administrators can better understand the SMB opportunities, the MEP consultants can increase their EE experience, and the SMB customers can gain exposure to the types of EE solutions available via the MEP organizations. Beyond 2011, the expectation is that the MEPs will add value to their customer engagements by offering quantifiable energy efficiency recommendations.

MEPs

Each MEP organization has its own goals, objectives, experience, and expertise. As a result, each one delivers a different set of value propositions and capabilities to utilities and their customers. Such capabilities include creating and providing energy training for their SMB manufacturer customers or integrating energy into their core Lean efforts. At least two of the MEP organizations will progressively tie energy into their Pollution Prevention (P2) or Economy, Energy and the Environment (E3) efforts. On the far end of complexity, some MEP organizations could develop and deploy an Energy Value Stream Mapping service similar to what California Manufacturing Technology Center (CMTC) has deployed for Pacific Gas and Electric (PG&E) and Southern California Edison (SCE). This type of effort would result in operation improvements to eliminate waste wherein energy savings are calculated and acquired for utilities with incentives paid to the customer.

NEEA

The delivery channel developed by the MEP network provides a conduit through which NEEA may elect to deploy future products and services to the SMB industrial segment. For example, based on the MEP network having the ability to quantify the effects of energy efficiency solutions, future versions of NEEA's CEI could be deployed through the network. Key information gained from the MEP engagements could also be used to develop other delivery channels for larger and smaller industrial business segments as well as commercial customers. In addition, NEEA may choose to add more advanced solutions to the approach, such as deploying a technical audit tool library program in which light meters, data loggers, and other tools are loaned out to the group and the MEP consultants are supported through training and phone-based resources. NEEA can utilize the MEP consultants and their SMB customers as prime users of the SEM-related documents/tools that NEEA will make available online. Over the next two to three years NEEA should have adequate knowledge to transition this effort to the EE program administrators of the region.

Energy Efficiency Programs

The EE program administrators of the Northwest regularly communicate with the NEEA industrial staff through periodic reports and advisory committee meetings. Through this communication, regional EE program administrators are aware that the current MEP Support Project activities occur in their territories, leverage their programs and services, and support their end-use customers, ultimately increasing uptake of their EE offerings. In addition, the EE program administrators are informed on the key findings of the work so that each group can make decisions about investing in local pilots or programs. Based on a working relationship, these groups will watch the savings from the demonstration project as well as obtain feedback from individuals within their service territories regarding success stories or areas for improvement. As each MEP organization currently engages customers within the service territories of each EE program administrator, both groups will need to have comfort and trust in the support and services provided by each; attitudes of "owning" the customer will need to be lessened to ensure that the customer has access to all of the opportunities made available by both groups.

Potential Partnerships with MEPs in other Regions

Nationwide, energy efficiency program administrators face many issues common to the Northwest, and it is logical to apply many of the approaches used in the Northwest MEP Support Project to other parts of the country. The approaches could be adopted within a state (e.g. in a single utility's geography), throughout a state (e.g. aligned to a state energy office), or across states (e.g. across a multi-state utility geography or within a regional/national coordination group geography such as the Northeast Energy Efficiency Partnership). If other entities sought to deploy these approaches or create this type of program, there could be a number of potential possibilities:

- Engagement with local MEP organizations – Program administrators could engage their local MEP organizations, initiate communications on goals between the two groups, and look for alignment. This interaction could lead to small pilots that prove abilities to work together in mutually beneficial ways.
- Engagement of NIST – As NIST provides leadership, support and coordination to local MEP organizations, they could be engaged in seeking opportunities to align and support respective initiatives. Energy is currently on the NIST radar, and having strong local partners can drive that momentum.
- Engagement with E3 efforts – The Economy, Energy and The Environment (E3) program derives much of its potential value from the collaborative nature of its participating agencies. It is currently in its nascent stages, and by reaching out to the participating agencies to look for mutually beneficial opportunities a local program administrator may see value.
- Creation of a regional MEP energy collaborative – There are strong benefits to MEP organizations sharing information about their efforts, including their emerging energy efficiency efforts. The Team has utilized a dedicated website, www.mepenergy.com, to foster collaboration and has leveraged local “Energy Leads” to share thoughts and best practices among programs. In the absence of existing MEP collaboration, other regions could foster such communication through similar efforts.

Conclusion

NEEA’s MEP Support Project with the Northwest MEP organizations will continue to produce valuable findings for the region’s EE program administrators to accelerate energy efficiency efforts in the SMB space. At the same time, the MEP organizations are examining ways to expand their services, and there are emerging programs that support the EE-related services from the MEPs. Of note is Economy, Energy and the Environment (E3), a program led by the US Environmental Protection Agency (EPA) that will also combine the support of the Department of Commerce, Department of Energy, and Department of Labor.

As a potential solution to address the energy efficiency needs of SMB customers, program administrators and market transformation organizations could explore opportunities to work with local MEP organizations. A structured program can leverage the MEP consultants’ knowledge, engagement approaches, and customer relationships to increase SMB energy efficiency and ultimately make these companies more competitive.

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