

Save It Forward: An Innovative Energy Pilot Lets Industrial Customers Support Their Local Communities

Jason Snyder, P.E., LEED AP, CEM, MEM, Tennessee Valley Authority

Clay Hoover, P.E., Tennessee Valley Authority

Kevin Wren, MBA Tennessee Valley Authority

Cindy Herron, CPA, Tennessee Valley Authority

Holly Baird, MBA, LEED AP, WELL AP, Milepost Consulting

ABSTRACT

The Tennessee Valley Authority (TVA) EnergyRight® Industrial Strategic Energy Management (SEM) program, originally launched in 2016, provides training and energy efficiency opportunities to industrial facilities in TVA's territory. Over time, TVA developed a strategy to make a bigger impact with the SEM program, which led to the development of the Save It Forward pilot. Through behavioral and operational changes, the pilot leverages the traditional SEM approach to help industrial customers make smart energy improvements. The pilot differs from a traditional SEM program where the savings remain with the customer by creating an opportunity for a portion of energy savings to be reinvested into the customer's local community. Energy cost savings are measured by an independent third-party and confirmed as the amount of savings created by the program. Industrial participants then pay it forward by reinvesting a set percentage of their avoided energy cost savings into a charitable contribution, funding a project at a local K-12 school. The program aims to create a scenario where industrial participants are rewarded with numerous benefits: energy savings, community stewardship, tax benefits, and positive brand exposure.

This paper will provide attendees with an overview of the pilot currently in progress, from the design stage to recruiting participants, followed by expected insights from this pilot. Topics will include low-cost operational and behavioral measures specific to industrial facilities, approaches for determining mutually agreeable savings estimates, funding partnership opportunities, and converting industrial savings into projects that improve energy use for schools and businesses in their local communities.

Introduction

Founded in 1933 as part of President Franklin D. Roosevelt's New Deal, TVA is the largest producer of public power in the United States. Covering approximately 80,000 square miles in the southeastern United States, TVA supplies wholesale electric power to approximately 10 million households, businesses, and industries primarily through a distribution network of 153 local power companies (LPCs) that encompass parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia.

Since its inception, TVA has been committed to improving the lives of the people of the Tennessee Valley (Valley) by providing safe, reliable, and cost-competitive power while promoting responsible environmental stewardship and advancing economic development opportunities through investment and partnerships with local communities.

Proud of its long history as a public power provider, TVA EnergyRight offers programs to help its industrial, business, residential, and other customers use electricity efficiently, minimize energy burden for our underserved populations, and reduce the carbon footprint of the Valley. For a list of TVA programs referenced in this paper, please see Table 2 in the Appendix.

The Need

As the largest public power provider in the country, TVA has the opportunity to significantly impact the people, environment, and economy of the Tennessee Valley region. Serving 1.7 million low-income households, aspiring to reduce carbon emissions, and needing to sustain economic development, TVA works with stakeholders and partner utilities to design and test new models for energy efficiency programs.

Realizing the opportunity to address all three of these needs, TVA is testing an innovative model of collaboration between energy efficiency programs to leverage the impact and benefit to all stakeholders.

SEM potential for Industrial. SEM programs provide customers with a behavioral change process of continuous improvement for saving energy and have grown in popularity across the United States and Canada, typically achieving both electric and natural gas savings of 6-10% in the first year of program engagement (Rogers, Whitlock, and Rohrer 2019). Importantly, SEM generally creates numerous low and no cost best practices for the industry to employ. Schulze et al. (2016) explains that the adoption of SEM programs can also lead to non-energy benefits, including:

- Raw material and water savings.
- Waste and pollution reductions.
- Improved working environments and employee health.
- Increased brand recognition.
- Enhanced employee engagement and morale.

Due to the savings potential, the non-energy benefits available, and the growing need to reduce carbon emissions, industrial facilities are a promising sector for SEM programs. Yet, commercial and industrial facilities can be some of the hardest building types to reach (Winslow 2021). This results in a unique challenge to customize SEM programs to shift to the needs of the industrial sector.

Under-resourced schools in the Southeast. In the Southeast, energy burden ranks among the highest in the country (Drehobl and Ayala 2020) while income, health, and wellness indicators rank among the lowest (Census Bureau 2021). Communities are facing increasing challenges, and schools are strained with staffing issues, lack of funding, deferred maintenance, and the continued difficulties related to COVID-19. As a result, energy management is rarely a priority for schools despite the multifaceted benefits.

After personnel costs, energy costs are the largest expense for K-12 school district operating budgets, totaling approximately \$8 billion annually nationwide (EPA 2008). However, energy cost does not have to be so high – as much as 30% of a school’s energy is used inefficiently or unnecessarily (EPA 2011). By incorporating energy management through low- and no-cost opportunities, schools can relieve a significant cost burden.

Increased attention to energy efficiency can also lead to improved learning environments. Problems with heating, ventilation, and air conditioning (HVAC) systems, lighting, and indoor air quality can be detrimental to student and staff comfort, performance and above all, health. When these systems are operating correctly and the learning environment is comfortable, recent research shows that a school's environmental quality can even have a positive impact on student's academic performance and mental health, as well as teacher and staff productivity and retention (EPA 2021).

By saving money and ensuring a healthy and comfortable indoor environment, schools can further invest in the future of the Valley. Money that would typically be spent on energy can be reallocated towards educational materials, augmented staffing, and other critical needs. Additionally, incorporating energy management into schools provides an opportunity to engage students and the greater school community in energy awareness and education. Instilling knowledge and energy-saving habits at a young age sets up kids to make informed decisions about energy, a lesson they can benefit from for the rest of their life. This was the origin of the TVA EnergyRight School Uplift program that is the programmatic model for the K-12 investment portion of the Save it Forward pilot.

History and Success of SEM Efforts

TVA has a storied and successful record of SEM programs for business and industrial customers. TVA's program for its large industrial customers, SEM for Industry, utilized a two-year consulting program to implement a continuous improvement process focused on low- and no-cost energy conservation measures. Serving industrial customers with an annual energy demand over 3.5 megawatts, proven success of this program can be seen in the average participant's 2.5-million-kilowatt hours saved over the two-year program, resulting in an average of \$192,000 reduced energy costs.

School Uplift, TVA's SEM program for K-12 schools, has also demonstrated sustainable success. In the first pilot year of the program, 11 schools were able to achieve an average of 13.1% energy reduction, resulting in average savings of \$11,000 for each school. One school was even able to save over \$43,000 on energy in one year. Early success in the first year of the program demonstrated the viability of School Uplift, as the second year of the program had 43 schools and 97 schools are currently participating in the third year.

The Opportunity

Always looking to improve the programs and incentives offered to customers, TVA realized that SEM programs could provide more value to its customers, their communities, and the people of the Valley. When SEM for Industry began, the \$1M program cost was an effective investment to accomplish energy-efficiency savings goals. Now, looking through the lenses of energy burden and community partnerships, TVA realized this program could do more.

Identifying this opportunity led to the creation of Save It Forward, a pilot that builds on the success and savings of the SEM for Industry program by incorporating a community reinvestment component. Save It Forward's innovative feature is that industrial participants will contribute 50% of their verified SEM-related savings towards a project for a local K-12 school of their choosing. The avoided cost contribution runs through TVA's 501(c)3 nonprofit partner, ensuring tax benefit eligibility and third-party fiduciary management. The energy savings from the industrial customer funds new energy savings for local schools, creates a powerful story that

can enhance brand reputation, and motivates stronger participation and engagement of the industrial employees knowing that their efforts will support a meaningful cause.

Pilot Development

The Save It Forward pilot is built on the successful foundation of the SEM for Industry program. When the TVA EnergyRight team saw an opportunity to reinvigorate the effort and expand its impact across more employees and into the community, the reinvestment portion of Save It Forward became the focus of development. Most notably, the school recipient and reinvestment amount requirements were carefully considered to ensure maximum value for all stakeholders.

Supporting Schools. Schools were chosen as the recipient of Save It Forward participant savings for a number of reasons. Connecting behaviors that create energy savings to children and support for local schools has the potential to unlock new levels of employee engagement. The Save It Forward pilot is expected to result in higher-than-average SEM savings. We anticipate that when employees see a direct correlation with their energy choices and funding that could support the school their children attend, the savings become tangible instead of an abstract avoided costs number in a report. By associating something as simple as turning off the lights, with helping an elementary school provide a better learning environment for the kids, employees may be further motivated to focus and expand their energy-saving behaviors.

Surveying for Interest. During pilot development, past SEM for Industry participants and prospective Save It Forward participants were surveyed to understand the initial perception of the Save It Forward concept. Out of the 31 previous and prospective participants, over 75% of respondents were interested in joining a partnership with TVA and their local power company (LPC) to reinvest 50% of their SEM-verified savings into projects targeting underserved school communities. Interest was determined if respondents selected 4 or higher on a 1-5 Likert scale where 1 means “not at all interested,” and 5 means “very interested” in the pilot. Past SEM for Industry participants indicated that the partnership with TVA and their LPC, financial savings and staff professional development were the most valuable benefits from participating in the SEM for Industry program. Using insight from this survey along with input from relevant stakeholders, TVA further shaped and refined the Save It Forward pilot to better suit the needs of its customers, LPCs and Valley communities.

Rolling cohort model. During recruitment of participants, it was discovered that interested potential participants preferred varying start dates. In order to offer flexibility and support to all participants, TVA decided to implement a rolling cohort model, where participants can begin the program at quarterly increments. Participants will still participate in cohort activities together, such as workshops and progress reports, either with the other cohort members that started at their same time, or with all current Save It Forward participants, if possible.

Save It Forward Pilot

The Save It Forward pilot employs a rolling-cohort model that can host up to 12 large industrial facilities in one year. Ideally, participating facilities have an energy demand greater than 3.5 megawatts and can either be a customer of an LPC in TVA’s territory or be served

directly by TVA. Program activities, including traditional SEM activities and the reinvestment of savings take place over a two-year engagement.

Compared to traditional industrial SEM programs, which typically function as a stand-alone approach (Therkelsen et al. 2001), Save It Forward is unique in what happens after participating customers have realized savings due to program activities. With Save It Forward, the customer pledges 50% of verified SEM-related savings back into that customer's local community. For the first cohort of Save It Forward, savings will focus on local K-12 schools as the recipient of the charitable contribution through the TVA EnergyRight School Uplift program. In future years, the pilot anticipates expanding funding opportunities to other programmatic offerings of TVA EnergyRight such as Home Uplift, a residential weatherization program, and Community Centered Growth, a small- to medium business revitalization pilot.

Building on the emotional motivator of bettering educational services in their community, engagement materials are provided for all Save It Forward participants. These materials further promote adoption of SEM practices and the savings potential by highlighting the positive impact of the program on local students, communities, and the Valley.

Involving schools in the Save It Forward pilot provides more than simply receiving free building upgrades. When a school agrees to receive funds to complete a project, that school can also engage and participate in the School Uplift program. This opens further opportunities for the school to receive SEM training of their own, access to energy savings best practices, and engagement materials to support energy awareness and education throughout their school community.

SEM Process

Save It Forward is built on a two-year, continuous improvement SEM program that includes workshops, webinars, site specific recommendations, and consulting support. This program structure creates an understanding of long-term energy solutions and practical low- and no-cost measures that have resulted in an average participant savings of 2.5-million-kilowatt hours saved over the two-year program, leading to \$192,000 average in reduced energy costs. However, if processes and practices are upheld, businesses can expect to see continued savings even after their participation in the program ends. Behavioral savings programs utilizing SEM aspects typically continue to yield savings for 3-5 years after onset (Rogers, Whitlock, and Rohrer 2019). Furthermore, TVA employs a challenge to all industrial participants to continue the work they have already started and utilize the Department of Energy's 50001 Ready tools even after the engagement ends (DOE n.d.).

Reinvestment Process

The reinvestment aspect of Save It Forward is what makes this program unique. Participating businesses will have control over who receives their contributions and the type of project. The following outlines the details of the savings contribution, school selection, and project determination.

Savings contribution. Reinvestment activities take place throughout the duration of the program but correspond to specific programmatic milestones. SEM-related savings are verified by a third-party and are provided on a quarterly and annual basis to pilot participants (hereafter referred to

as industrial participants). Regular reporting tracks and benchmarks savings for industrial participants to have a better understanding of their energy saving progress throughout the year.

After onboarding industrial participants to the performance tracking models and reaching an agreement with the methodologies being employed, the next step is agreeing to their verified savings. Industrial participants will then sign an allocation form, which specifies the exact amount they will be contributing to a project at a school of their choosing. Industrial participants agree to contribute at least 50% of their savings, up to \$50,000 per year, but can choose to also contribute more. If at the end of the first year, they want to hold the funds until after the second year to fund a larger project with the combined contributions over the two years, they can. After receiving their verified savings for the second year, marking the completion of the SEM portion of the program, industrial participants will sign another allocation form, again committing to contributing 50% of their second-year savings, up to \$50,000.

Understanding what realistic savings and contributions to expect from large industrial customers can be helpful. Table 1 shows the actual, verified SEM-related savings from a sample of SEM for Industrial participants from a prior year. The third, fifth, and sixth columns show what these industrial participants would have donated if they had achieved those savings in the Save It Forward pilot.

Table 1. Hypothetical yearly and total contributions

Industrial participant	Year 1 Savings	Year 1 Contribution	Year 2 Savings	Year 2 Contribution	Total Contribution
1	\$253,864	\$50,000	\$260,998	\$50,000	\$100,000
2	\$19,971	\$9,985	\$2,493	\$1,247	\$11,232
3	\$42,896	\$21,448	\$26,183	\$13,092	\$34,540
4	\$124,414	\$50,000	\$11,186	\$5,593	\$55,593
5	\$221,481	\$50,000	\$104,064	\$50,000	\$100,000

Verified annual savings from a sample of SEM for Industrial participants. Yearly contributions are included to show what they would have reinvested if they were to be in the Save It Forward pilot.

501(c)(3) non-profit partner. TVA’s 501(c)(3) partner will manage the contributions upon verification of annual savings by the industrial participant. By passing the funds through a 501(c)(3) partner, the industrial participant will be able to claim their contribution as tax-deductible, amplifying their net savings. Additionally, since the community project may take additional time to complete, this allows contributing industrial participants to immediately realize tax deductions at the time they are made.

School and project selection. Since the industrial participant understands the complexity of its community and its specific needs the best, they are largely in control over selecting the school that will receive a percentage of their savings and project selection. TVA will provide support as needed in helping the industrial participant identify a school and project.

There are two parameters for school selection: the school selected must serve students between the kindergarten and grade 12 levels, and the school must be in the Tennessee Valley service area either as an LPC-served account or directly served by TVA. TVA will share a short-

list of underserved schools for consideration, though the industrial participant will not be required to pick from that list. Industrial participants will ultimately decide which school they want to partner with to reinvest their savings into a project that improves the learning environment.

Once a school has been identified and confirmed, TVA will assess the building upgrade options for that school. TVA encourages energy investment projects for at least a portion of the investment and the team provides extensive support to make these possible. The site assessment will identify relevant energy efficiency measures and anticipated costs. The school will receive the site assessment report, which will identify their top three projects. The project options will be presented to and selected by the school. Each school will be responsible for managing the project to completion with funds being distributed as a reimbursement based on project milestones.

The Value

Save It Forward provides value to many different stakeholders including industrial participants, schools, Valley communities, LPCs, and TVA.

Industrial participant. The most obvious beneficiary, the industrial participant, will see value through various features of the program. Cost savings will be realized through both a lowered energy bill and through the tax deduction due to the 501(c)(3) contribution. As a result of the learnings gained from the SEM process, industrial participants can also expect to improve business performance and gain a competitive advantage in their industry, due to being more effective and efficient in their operations and processes.

Improved productivity can result in the ability to release additional production capacity without the need to build new facilities or alter operations. Sustainability, a growing demand of customers and business mandates, becomes an integral part of industrial participant's operations, which can spark further business transformation and improve brand identity.

SEM improves energy efficiency, which advances the competitiveness of companies within their industry. With the pilot's direct connection to employee engagement, improved employee morale and commitment can be expected. With 11.6 million individuals working in manufacturing alone, there is huge potential and need to ensure employee satisfaction and recognition of this growing sector (US Bureau of Labor Statistics 2021). The cohort-based approach of Save It Forward contributes to increased performance through an environment that allows for sharing of best practices and peer-centered learning between industrial participants. Participating and working with other pilot participants can also result in increased performance due to good-natured competitiveness, as participants not only want to meet their energy savings goal but want to have the highest savings in their cohort. Additionally, the cohort develops a support network encouraging perseverance, accountability, and friendly competition.

Increased brand recognition and demonstrated leadership because of community support and heightened visibility is another benefit that industrial participants can expect to see. To enhance this, TVA will provide marketing and public relations support to industrial participants to help them share their Save It Forward story. This may include news stories, social media, and PR videos to share the industrial participant's commitment to energy savings, partnership with their chosen school, and overall community support. The industrial participant, local power company, and TVA all see gains in triple brand exposure, each gaining a new audience that cares about this partnership for a variety of reasons.

Recipient. Along with receiving a free project, recipient schools will see additional benefits from Save It Forward. When confirmed as a recipient, schools have the opportunity to join School Uplift, TVA's SEM program for K-12 schools in the Valley. School Uplift provides schools with support in SEM training and efficiency upgrades. Increased energy efficiency and management in school buildings has a profound effect. Increased air quality, comfort, and proper lighting contribute to a better, more comfortable learning environment, which research has shown can contribute to increased academic performance, mental health, and productivity (EPA 2008).

Participating in School Uplift also allows schools access to grants. Current grants offered by School Uplift include a Building Energy Upgrade grant valued at \$400,000. The Building Energy Upgrade grant is a needs-based grant used primarily to upgrade outdated lighting and HVAC systems. The other grant is a Learning Environment Grant, valued between \$10,000 and \$25,000. The \$25,000 grant is awarded to the top ten schools based on their participation in program activities and their level of engagement in the program. The \$10,000 grant is awarded to all other schools that complete the established program requirements. The Learning Environment Grant can be used on any school project, as long as it is equitable, long-term, and contributes to bettering the school's learning environment. To further support underserved communities, grant application scoring is weighted to include factors such as county energy burden, median income, and childhood poverty rate.

The school and industrial participant partnership also offers unique benefits to both parties. Mentioned above, the partnership can enhance energy saving efforts at both locations. Yet, Save It Forward creates potential for further partnership opportunities even after the program has ended and the project has been completed. Industrial participants can offer first-hand job and career knowledge and advice to students, from kindergarteners to high school seniors as prospective employees. Industrial participants can use their partner school to establish a workforce development program that could then be rolled out regionally or Valley wide. TVA embraces further exploration of these relationships and all that can be accomplished as we continually work to improve the offering.

Community. Many communities already find their collective identity around a major employer or local school. Save it Forward builds on that and looks to showcase the possibilities, values, and outcomes an innovative partnership like this can inspire. We believe communities will want to further explore and promote these types of relationships. There is also an opportunity to engage the entire community in the program mission. After seeing the results of Save It Forward, other community businesses, organizations, and members may want to explore what options they can do to help support their community, including spreading awareness of energy efficiency and sustainability into more community activities.

TVA/LPC. While created to directly benefit large industrial customers and schools, Save It Forward also provides value to TVA and LPCs. Providing this unique offering to serve the needs of its customers and their communities enhances TVA's and LPCs' reputation as a responsible, valuable resource for energy information and support. As a program offered in partnership between TVA and LPCs, strengthening the relationship between TVA and LPCs also serves to benefit both entities.

As industrial participants will be selecting schools to receive energy-related projects and participate in School Uplift, TVA will also benefit by expanding the reach and capabilities of its other EnergyRight programs. Because industrial participants will likely be self-identifying and

reaching out to these schools, it also alleviates the need for TVA to manage and recruit schools into the School Uplift program. This unique partnership between programs can be used to test and explore the potential for similar partnerships with other EnergyRight programs.

Desired Outcomes/Program Aspirations

As Save It Forward is still in the early stages of implementation, the current desired outcome for this pilot will be to have full participant retention and successful project completions for each recipient school.

Moving forward, future aspirations include more industrial participants interested in the pilot, allowing for new cohorts to begin every year. Increased funding from other stakeholders is another goal of pilot development. Including LPCs, organizations, states, and educational stakeholders as options for funding support can enhance the impact that Save It Forward has for both industrial participants and schools.

Most notably, once Save It Forward proves to be successful in partnering with School Uplift, TVA hopes to expand potential recipients to be inclusive of all EnergyRight programs. This can include energy upgrades in residential homes, specifically low-income households, which is the objective of TVA EnergyRight's Home Uplift program, as well as supporting energy efficiency programs for small businesses in underserved communities, served by TVA EnergyRight's Community Centered Growth.

Conclusion

SEM programs have proven to be a viable and sustainable program for establishing continuous improvement and energy savings for a variety of sectors. TVA has shown success and promise through SEM programs for a variety of its customers, including schools, businesses, and industries. Looking to always innovate and provide more valuable programs, TVA developed the Save It Forward pilot to offer its industrial customers the ability to save money and improve business performance, while also making a significant impact in their community through investing in local schools.

Throughout the course of the pilot, understanding results, findings, successes, and obstacles will be used to further iterate and refine to better serve the needs of Valley customers. Findings and lessons learned from this pilot will also be used to understand how this type of partnership can be applied and modified to serve other SEM and energy efficiency programs for all utilities.

Appendix

Table 2. TVA EnergyRight program overview

Program name	Overview	Participants
Community Centered Growth	Supports struggling small businesses in communities with energy-efficient upgrades and access to energy resources.	Communities that fall within National Opportunity Zones.

Home Uplift	Provides free home energy upgrades to qualified residents.	Income eligible residential customers.
Save It Forward	An SEM program for large industrial customers, where participants commit to donating 50% of their SEM-related savings to a project at a K-12 school.	Large industrial customers within an annual energy demand charge over 3.5 megawatts.
School Uplift	SEM program offered to K-12 schools in the Valley. Focuses on reducing energy costs, improving the learning environment and engaging school community in energy awareness.	K-12 schools.
SEM for Industry	The SEM program for large industrial customers that was previously offered.	Large industrial customers.

The TVA program names, a brief description and what customer or group they target that are referenced in this paper.

References

- Census Bureau. 2021. “Income and Poverty in the United States: 2020.” <https://www.census.gov/data/tables/2021/demo/income-poverty/p60-273.html>.———. “Table A-1. Income Summary Measures by Selected Characteristics: 2019-2020.” <https://www2.census.gov/programs-surveys/demo/tables/p60/273/tableA1.xlsx>.
- Center for Active Design. 2021. *A Better Box – Optimizing Industrial Spaces for Employee Health and Wellness*. Washington, DC: Center for Active Design. <https://assets.ctfassets.net/fuo6knzstk5a/1EP1ekbNhtuYlwqN2Gen6j/a9c9af0987a57eb236fa896f883e04b2/CFAD-report-layout-FINAL.pdf>.
- DOE (Department of Energy). N.d. *50001 Ready Program*. Washington, DC: DOE. <https://www.energy.gov/eere/amo/50001-ready-program>
- Drehobl, A. and R. Ayala. 2020. *How High Are Household Energy Burdens? An Assessment of National and Metropolitan Energy Burdens across the U.S.* Washington, DC: ACEEE. <https://www.aceee.org/research-report/u2006>.
- EPA (Environmental Protection Agency). 2008. *ENERGY STAR Building Upgrade Manual*. Washington, DC: EPA. www.energystar.gov/buildings/tools-and-resources/building-upgrade-manual.
- EPA (Environmental Protection Agency). 2011. *Energy Efficiency Programs in K-12 Schools*. Washington, DC: EPA. www.epa.gov/sites/default/files/2015-08/documents/k-12_guide.pdf.

- EPA (Environmental Protection Agency). 2021. *How Does Indoor Air Quality Impact Student Health and Academic Performance?*. Washington, DC: EPA. www.epa.gov/iaq-schools/how-does-indoor-air-quality-impact-student-health-and-academic-performance.
- Hamari, J., J. Koivisto, and H. Sarsa. 2014. "Does gamification work?--a literature review of empirical studies on gamification." Paper presented at *Hawaii international conference on system sciences*.
- National Center for Health Statistics. 2019. *Health, United States*. Hyattsville, MD: National Center for Health Statistics. <https://dx.doi.org/10.15620/cdc:100685>.
- Rogers, E., A. Whitlock, and K. Rohrer. 2019. *Features and Performance of Energy Management Programs*. Washington, DC: ACEEE.
- Schulze, M., H. Nehler, M. Ottosson, and P. Thollander. 2016. "Energy management in industry: a systematic review of previous findings and an integrative conceptual framework." *Journal of Cleaner Production* 112(5) 3692-3708.
- Therkelsen, P., H. Fuchs, W. Miller, A. Whitlock, and E. Rightor. 2021. *Strategic Energy Management Program Persistence and Cost Effectiveness*. Washington, DC: ACEEE.
- Winslow, A. 2021. *Six Strategies to Accelerate the Adoption of SEM in the Northeast*. Lexington, MA: NEEP. <https://neep.org/blog/six-strategies-accelerate-adoption-sem-northeast>
- US Bureau of Labor Statistics. 2021. *Manufacturing: NAICS 31-33*. Washington, DC: US Bureau of Labor Statistics. <https://www.bls.gov/iag/tgs/iag31-33.htm#workforce>