



Program Guide: For Better Plants Challenge Partners

Welcome to the U.S. Department of Energy’s (DOE) Better Buildings, Better Plants Challenge (Challenge). The Challenge is the industrial component of the Better Buildings Challenge, a voluntary leadership initiative with the goal of significantly advancing energy efficiency in commercial buildings and industrial plants across the country. Through this program, partners join other industry and community leaders to create and share real solutions that reduce energy consumption, create jobs, and save money.

This program guide provides details on Challenge partner milestones as well as program tools and support. The Better Plants Challenge team will work with each partner to achieve program milestones and will provide ongoing quarterly check-in calls or meetings.

Thanks again for participating in this important national leadership initiative, for committing to energy efficiency, and for creating and sharing energy efficiency solutions to persistent energy challenges.

We look forward to working with you.

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Information Submission Forms (Attached Separately in Microsoft Word):

- ▶ Showcase Project Template
- ▶ Implementation Model Template
- ▶ Annual Data Reporting Form

This is one of a series of guides for the Better Buildings Challenge, including:

- ▶ Better Buildings Portfolio Partner Program Guide

Partner Milestones

Better Buildings, Better Plants Challenge partners make ambitious commitments to energy efficiency, transparency, and leadership. To track and recognize these commitments, DOE asks partners to reach specific milestones within the Challenge. In the spirit of an ongoing partnership, DOE will track achievements and progress with regular check-ins.

FIGURE 1: BETTER BUILDINGS, BETTER PLANTS CHALLENGE MILESTONES

WITHIN	MILESTONE	HOW
Start	<ul style="list-style-type: none"> ▶ Join Better Buildings, Better Plants Challenge 	<ul style="list-style-type: none"> ▶ Senior Executive signs and submits Partner Agreement
1 month	<ul style="list-style-type: none"> ▶ Assign senior leader and primary point of contact ▶ Submit partner profile information for Better Buildings/Plants Solutions Center website 	<ul style="list-style-type: none"> ▶ Submit contact information to Challenge team ▶ Refer to welcome e-mail for the key pieces of information needed to build your web profile. Send these in to your DOE lead via e-mail
3 months	<ul style="list-style-type: none"> ▶ Announce first showcase project, if available (see page 4 for details and examples) 	<ul style="list-style-type: none"> ▶ Use Showcase Project Template (see attached file)
6 months	<ul style="list-style-type: none"> ▶ Announce energy efficiency implementation model, if available (see page 5 for details and examples). Note: Partners can choose to do the showcase or implementation model first and wait until they are finished with the first one before starting on the second document. ▶ Make available facility-level portfolio-wide energy data, if available. Otherwise, do so after establishing energy baseline and when partner is able to submit their first annual report¹ 	<ul style="list-style-type: none"> ▶ Dialogue with Challenge team ▶ Use Annual Reporting Form template to submit your energy data
9 months	<ul style="list-style-type: none"> ▶ Begin implementation of first showcase project, if ready. 	<ul style="list-style-type: none"> ▶ Use Showcase Project Template (see attached file)

¹ Partners that were previously reporting energy use data to DOE under another voluntary energy efficiency partnership program should retrain their existing reporting timelines.

<p>Ongoing</p>	<ul style="list-style-type: none"> ▶ Monthly: Stay in regular (monthly preferred) contact with your TAM ▶ Quarterly: provide updates on showcases, models, and progress ▶ Annually: update of facility-level portfolio-wide energy data 	<ul style="list-style-type: none"> ▶ Quarterly calls with TAMs and DOE program staff
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Website Profile

Each partner will have a profile page on the Better Buildings Solution Center website:

<http://betterbuildingssolutioncenter.energy.gov> (see Figure 2 for an abbreviated example). Initially, the page will contain the partner's logo, a photo, and brief background on the partner and any past energy efficiency accomplishments. Over time, the page will be built out with links to the partners' showcase project, implementation model, and energy performance data display page. Additionally, other resources developed with DOE staff, e.g. presentations, can be added to the Challenge partner's profile page.

Links to partner pages can be found on the Solution Center website at:

<http://betterbuildingssolutioncenter.energy.gov/partner-list-program>.

Please send information to your Technical Account Manager and DOE program lead via e-mail to build your web profile.

FIGURE 2: ABBREVIATED EXAMPLE OF A BETTER BUILDINGS, BETTER PLANTS CHALLENGE PARTNER PROFILE PAGE

The screenshot shows a web profile for 3M. At the top left, there is a breadcrumb trail: Home > Partnerships > Partners > 3M. The 3M logo is prominently displayed. Below the logo, the text '3M' is repeated. To the right, there is a 'Share' button with a social media icon. The main content area is divided into several sections:

- CHALLENGE COMMITMENT:** A large number '111' is shown, with 'Facilities' written below it.
- SHOWCASE PROJECT:** A link to 'Laboratory Building 236 Ventilation Upgrade'.
- IMPLEMENTATION MODELS:** A link to 'Capital Set Aside Fund'.
- Plant Energy Awards For Internal Recognition:** A link to 'Plant Energy Awards For Internal Recognition'.
- ENERGY PERFORMANCE:** A link to 'View details on 3M's progress to date'.

On the right side of the main content area, there is a 'GOALS' section showing '25%' with the text 'Reduction in Energy Intensity' and a small circular icon. Next to it is a 'PROGRESS' section with a green checkmark and the text 'Goal Achieved'.

Below the main content area, there is a photograph of a person in a lab coat and safety glasses working with laboratory equipment. Underneath the photo, there is a paragraph of text: '3M is a diversified technology company serving customers and communities with innovative products and services operating in more than 65 countries. Between 1990 and 2010, 3M cut absolute worldwide greenhouse gas emissions by 72%.' Below this is another paragraph: 'As a partner of the Better Buildings Challenge, 3M met its initial goal by improving energy intensity by 25% cumulatively over nine years. The company has set a new goal of improving energy intensity by an additional 30% over ten years. Through the Better Buildings Better Plants'.

For Challenge partners, DOE will develop two free case studies as part of the Challenge partnership agreement. These case studies are referred to within the program as “Showcase projects” and “Implementation models” and both are described separately below:

Showcase Projects

Showcase Projects demonstrate that Better Buildings, Better Plants Challenge partners are taking immediate, concrete actions resulting in significant and real energy savings. They are an opportunity to highlight specific projects that are innovative, aggressive, and notable and share strategies, solutions, and results.

These are not intended to be exhaustive case studies or overly focused on the technical details of energy efficiency. Rather, **showcase projects are high-level case studies of the development, implementation, and results of real projects that create significant reduction in energy intensity.** Partners are encouraged to have multiple showcase projects descriptions but are asked to identify at least one within three months of joining the Challenge and begin implementation within nine months. Note: This timeline is a suggestion. If the Challenge partner’s showcase is not ready or they are too busy working with their TAM to establish their energy baseline, they can defer showcase development until it is convenient for them. Also, Challenge partners that apply for a Better Project or Better Practice award will have either showcase documents (based on Better Project) or implementation models (based on Better Practice) developed using the application form content.

Recommendations

To create a compelling showcase project, select a discrete project or set of projects within a single facility that:

- ▶ Is replicable and can demonstrate to others how to take similar action
- ▶ Exemplifies forward-thinking towards energy efficiency
- ▶ Results in either \$1 million investment in energy efficiency, or a 10% improvement in the facility’s energy intensity over a two-year period. Note: These investment and savings amounts are suggestions. High-quality project that yield strong energy savings and cost savings will be considered.

Effective showcase projects tend to not only show significant improvements in energy performance, but also utilize **innovative ideas and technologies.**

Better Plants Challenge partners should implement their showcase projects at industrial facilities.

Reporting and Recognition

DOE will create a Web page for each Challenge partner where the showcase project will be posted when it is identified and will update it as the project is implemented and the results are measured. The following information, as well as any additional details that are unique to the specific project, will be collected about each project, as reflected in the attached **Showcase Project Template.** Challenge partners will have the opportunity to review and approve any and all showcase project case studies before being posted.

Initial information on showcase project:

- ▶ Location, NAICS code, description of goods produced at plant, ownership type, size of plant, energy use, photo(s)
- ▶ A paragraph describing the project, including the process for identifying the opportunity, defining the project, and deciding to proceed
- ▶ Expected energy savings, cost savings, and other results
- ▶ Investment details
- ▶ Expected duration of implementation
- ▶ Lessons learned and replication potential

Quarterly updates on project implementation:

- ▶ An updated description of progress, including any changes to expected results or implementation schedule
- ▶ Information at project completion
- ▶ A brief description of any barriers addressed, innovations used, or lessons learned over the course of the project
- ▶ The types of energy efficiency measures implemented and the percentage of savings produced

Ongoing information after project completion:

- ▶ Actual energy savings compared with estimates
- ▶ Updates to actual cost savings compared with estimates

Example Showcase Project

Cummins' showcase project – on the partner's energy retrofitting project at its Jamestown Engine Plant in New York – is a good model. (See **Figure 3, next page** for an abbreviated screenshot). It describes the project clearly and concisely and highlights significant energy and cost savings. It also provides very specific energy intensity data.

View the full showcase project at: <http://betterbuildingssolutioncenter.energy.gov/showcase-projects/jamestown-engine-plant>.

FIGURE 3: ABBREVIATED EXAMPLE OF A SHOWCASE PROJECT – CUMMINS' JAMESTOWN ENGINE PLANT



Workers installing air handlers outside plant

Showcase Project: Jamestown Engine Plant

SECTOR TYPE

Industrial

LOCATION

Lakewood, New York

PROJECT SIZE

995,000 Square Feet

FINANCIAL OVERVIEW

Project Cost \$29.7 Million



Annual Energy Use

(Source EUI)

Baseline (2011)	4.62 MMBTU/ equivalent engine
Expected (2016)	3.08 MMBTU/ equivalent engine
Actual	Coming soon

Energy Savings:

33%

Annual Energy Cost

Baseline (2011)	\$36.57 equivalent engine
Expected (2016)	\$25.43 equivalent engine
Actual	Coming soon

Cost Savings:

30%

BACKGROUND

Cummins is undertaking a deep energy retrofit project at its Jamestown Engine Plant (JEP) in Lakewood, NY, as part of its corporate-wide commitment to reduce energy intensity. The project combines a suite of energy efficiency measures and necessary infrastructure upgrades to achieve significant energy savings alongside optimal systems performance for the entire facility.

Implementation Models

Through the Better Buildings, Better Plants Challenge, DOE highlights the development and use of innovative strategies to overcome persistent challenges to energy efficiency improvements. As a cornerstone of participation, partners identify at least one implementation model that they have or will use to address widespread barriers in the market; share the process they followed; and share the specific tools, documents and steps they used to achieve success.

In contrast to showcase projects, **implementation models are more like management case studies that document initiatives that Challenge Partners have implemented at the corporate level that overcame some barrier to energy efficiency**, rather than profiles of projects at individual facilities. Implementation models can also be thought of as a kind of “playbook” to help peers understand how to overcome barriers or just facilitate your organization’s ability to improve energy performance. As with showcase projects, partners are welcome to identify and participate in developing more than one implementation model to show how they achieved significant savings. Challenge partners will have the opportunity to review and approve all implementation models before being posted.

Recommendations

To identify an implementation model that can be used by other organizations, select one that:

- ▶ Is innovative but replicable
- ▶ Addresses an acknowledged barrier to achieving energy efficiency
- ▶ Has led to demonstrated, measurable results
- ▶ Includes specific strategies and tools that were developed and used to achieve success
- ▶ Is related to organizational processes, high-level corporate decision making and policies, business decisions, or financial and budget structures
- ▶ Addresses a relatively discrete issue rather than a broad narrative, such as describing the development of the partner’s overall energy strategy

Effective implementation models tend to include **links to related documents and tools** to provide a deeper understanding and enable others to emulate the results. It is also important for implementation models to **clearly map out the partner’s process and “tell the story”**, since they typically profile ideas that developed over the course of several years.

Reporting and Recognition

Implementation models will be highlighted on partner Web pages and in other areas of the Better Buildings Challenge program. DOE expects implementation models to be diverse and replicable. The implementation model template provides flexibility in terms of the type of information provided. DOE is also happy to conduct a phone interview with the partner to collect information for the implementation model.

The following is an example of what kind of information DOE will highlight in the implementation models, but please refer to the implementation model template for more details.

- ▶ A short description of the model, the barrier(s) it is designed to overcome, and how it was created and used
- ▶ A short description of the success achieved or expected by using the model and how the Partner has or will measure success
- ▶ Documents (such as policies, procedures, implementation summaries, presentations, contracts, models, or other tools and resources) that are developed to support the model that others might use to replicate success

Ongoing at quarterly check-ins:

- ▶ Any update on the use and impact of the model and related energy savings, cost savings, or other benefits
- ▶ Any updated or additional materials that support the model

Example Implementation Model

Johnson Controls' implementation model – on the partner's Supplier Efficiency Program – is a good implementation model-example. (See **Figure 4, next page** for an abbreviated screenshot). The program provides the partners' small- and medium-sized suppliers with energy management tools, training, and on-site technical assistance.

The implementation model describes all aspects of the program, including the thinking behind it, the implementation process, and the tangible results to date. Johnson Controls also provided several program-related documents, which are accessible via links in the implementation model.

View the full implementation model at: <http://betterbuildingssolutioncenter.energy.gov/implementation-models/supplier-efficiency-program>.

FIGURE 4: ABBREVIATED EXAMPLE OF AN IMPLEMENTATION MODEL – JOHNSON CONTROLS' SUPPLIER EFFICIENCY PROGRAM

Share 

ORGANIZATION TYPE

Diversified product manufacturer in the building, energy storage and automotive industries

BARRIER

Ability to scale up efforts to help small- and medium-sized (SME) suppliers improve the energy efficiency of their plants

SOLUTION

Development of a standard, scalable program that provides SME suppliers with energy management tools, training and on-site technical assistance

OUTCOME

Energy savings across the supply chain by increasing the number of SME suppliers trained to identify and implement low-cost/no-cost energy efficiency improvements in their plants

**Implementation Model:
Supplier Efficiency Program**

OVERVIEW

Johnson Controls, a global multi-industrial company with established core businesses in the automotive and building industries, launched a pilot supplier efficiency program which includes energy management experts visiting the plants of SME suppliers and training their in-house teams on low-cost/no-cost energy efficiency best practices. Johnson Controls' experts visit supplier sites to lead on-site assessments, share efficiency checklists and tools, and provide guidance on developing business cases for capital improvements. The on-site assessments follow an industry practice known as "energy hunts" which Johnson Controls has used successfully for years to engage facility staff across its plants in identifying and implementing low-cost/no-cost energy savings measures. Energy hunts at supplier facilities have resulted in average savings estimates in the range of 5-10%.



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PLAYBOOK ^ TOOLS v



Policies

Like many large manufacturing companies, the environmental footprint of Johnson Controls' supply chain is up to five times larger than the environmental footprint of its internal operations. The company decided that working with SME suppliers, which often have limited resources and expertise, could provide significant environmental benefits while helping the suppliers reduce energy costs, increase their competitiveness, and minimize the impact of future energy price increases and water shortages on their operations. Similar to other large manufacturers, Johnson Controls success is linked to the competitiveness, sustainability and resilience of its diverse supply base, all of which are enhanced through improved energy and resource efficiency.

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Corporate-Wide Energy Performance Data

To document the significant and sustained energy savings achieved by Better Buildings, Better Plants Challenge Partners, DOE regularly collects corporate-wide energy performance data and facility-level data. The information is aggregated and represented in source units to protect proprietary information. The data will be used to document partners' progress toward achieving the energy reduction goal of the Better Buildings, Better Plants Challenge and to recognize partners' achievements. To chart progress toward the energy savings goal, DOE will use standard energy performance data collected once a year. Challenge partners will have the opportunity to review and approve any and all data displays before being posted.

Energy intensity data should be adjusted or normalized to account for economic and other factors that affect energy consumption. DOE has developed data normalization tools and resources, and will provide assistance to Partners to help with this process (see for example DOE's [Energy Performance Indicator](#) tool and [Energy Intensity Baseline and Tracking Guidance Document](#)). The following are examples of data that will be collected and used to measure overall reduction in energy consumption throughout the portfolio:

Corporation-Wide Energy Savings

- ▶ Corporate wide energy use (in TBtu)
- ▶ Annual and cumulative percent improvement
- ▶ Annual and cumulative Btu savings

Corporation-Wide Cost Savings

- ▶ Annual and cumulative energy efficiency investment
- ▶ Annual and cumulative energy cost savings

Facility-Level Energy Performance

- ▶ Improvements at the facility level, represented as a distribution of energy performance levels at participating plants (i.e., 2 plants achieved less than zero percent improvement, 4 plants achieved between zero and 2 percent improvement, 8 plants achieved between 2 and 4 percent improvement, etc.)
- ▶ Partners that participate in the water efficiency initiative and the waste reduction pilot will have similar data displays created for each initiative.