# Designing a State Industrial Energy Efficiency Challenge and Recognition Program: Colorado's Experience

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**ABSTRACT**

As the Department of Energy moves into the next phase of its Save Energy Now campaign, states, too, are revisiting, revising, and re-invigorating their own industrial energy efficiency strategies and programs—often spurred by state-wide climate action plans.

In this paper, we present the recent experiences of Colorado in designing and launching an industrial energy efficiency challenge and recognition program. Stemming from Colorado Governor Bill Ritter's Climate Action Plan to reduce statewide greenhouse gas emissions 20 percent from their 2005 levels by 2020, our new industrial effort is based on encouraging industrial firms in Colorado to make voluntary commitments to reduce energy intensity, giving them training and technical assistance to identify and implement energy-saving efforts, and highlighting their successes.

Some of our own challenges in designing this program include how to motivate both facility managers and upper management to work together in reducing energy intensity, how to best take advantage of rising energy costs and concerns of an unstable economy to catalyze plant equipment upgrades, and how to stimulate project implementation while avoiding site assessments that are "put on a shelf for later" in this period of economic contraction and limited investment capability. In addition to examining the above items, we discuss our initial efforts to develop a memorandum of understanding that companies would agree to, sign up companies as participants, collect baseline data, and develop services that respond to industry needs.

## Introduction

The Colorado Industrial Energy Efficiency Challenge (CIEEC) is a new voluntary state and business partnership that challenges Colorado's industrial firms to set and meet energy intensity reduction goals and advance energy efficiency at Colorado plants. In exchange for joining the program and setting an energy intensity reduction goal, companies become eligible for technical assistance, on-site assessments, technical and energy management-focused trainings, membership in an industrial managers' roundtable for information exchange, and a healthy dose of recognition for energy efficiency accomplishments.

This program is being launched by the Colorado Governor's Energy Office, in partnership with Southwest Energy Efficiency Project (SWEEP), Colorado State University Industrial Assessment Center, ETC Group, and the Intermountain Combined Heat and Power Center (see **Figure 1**). The program is one of 12 state and regional industrial energy efficiency programs that recently won funding from the Department of Energy's Industrial Technologies program, which will supplement funding from the State of Colorado (DOE 2009a). We anticipate launching the CIEEC during the summer of 2009.

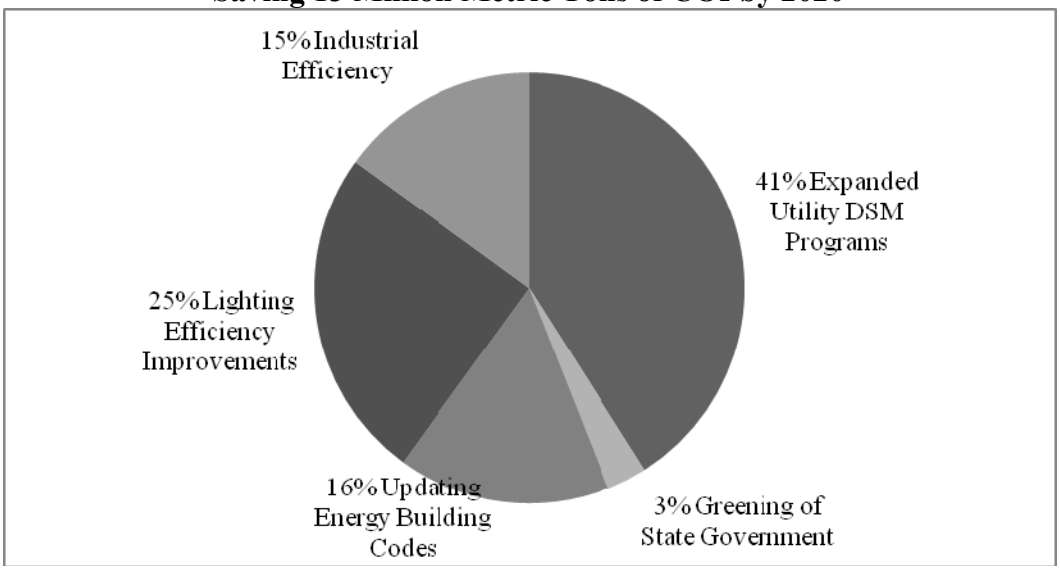
**Figure 1. Project Partners**


## The Basis for the Program: Colorado's Climate Action Plan

This program stems from Colorado's Climate Action Plan, codified by Colorado Governor Bill Ritter, Jr. in November of 2007 as *Executive Order D004 08 Reducing Greenhouse Gas Emissions in Colorado* (Ritter 2007). The full plan establishes a goal of reducing statewide greenhouse gas emissions by 20 percent by 2020, using 2005 as a baseline. This plan was motivated by both climactic and water concerns relevant to Colorado's economy: longer periods of drought, less winter snowpack, shorter ski seasons, more risk of wildfire and beetle infestations, and already stretched demands for water supplies.

The foundation of the Climate Action Plan is achieving half of the greenhouse reductions through energy efficiency (see **Figure 2**). Implementing an Industrial Challenge Program would meet 15 percent of the state's energy efficiency goals and is estimated to save 2.2 million metric tons of $CO_2$ by 2020.

**Figure 2. Energy Efficiency Goals in the Climate Action Plan: Saving 13 Million Metric Tons of $CO_2$ by 2020**




Source: Ritter 2007

Several Colorado cities, too, already have climate action plans of various designs—notably Fort Collins, Denver, Boulder, Aspen, and Carbondale. These cities are also potential partners as the CIEEC gets off the ground.

**What a Company Commits to by Joining**

In joining the Colorado Industrial Energy Efficiency Challenge, partner companies will commit to five things:

- Establish a benchmark of current energy use. Companies can use 2005 data, in order to count improvements made in the past 3 years. CIEEC program staff will help companies develop their benchmarks as necessary.
- Set an ambitious yet reasonable and achievable energy intensity reduction goal (energy consumption per unit of production or other appropriate metric) and then construct an action plan. Each company will choose their own reduction level and date, because a mandated or one-size-fits-all approach does not seem workable. There will be no penalties for firms that don't meet their goal, though companies could be dropped for long periods of inaction.
- Participate generally in the activities of the program as necessary to meet their goal.
- Educate their staff and the public about their partnership and achievements in CIEEC.
- Report annually on energy savings and progress towards their goal.

**Program Activities**

The program will offer a range of technical and educational assistance to make it easier for partner companies to reach their energy intensity goals.

The Colorado State University Industrial Assessment Center (CSU IAC) will offer energy assessments to interested companies. The CSU IAC has already completed 613 industrial assessments over the past 24 years. However, the energy assessments will differ from regular IAC and DOE ITP Save Energy Now assessment protocol in the level of follow-up, in an effort to take a more active role in assuring post-assessment implementation. The aim is to ensure that all economically-feasible recommendations in an assessment report are actively pursued, rather than just "put on a shelf for later." Following the assessments, we hope to provide more tools to the plants to aid in pursuing the recommendations including facilitating contacts to vendors, consultants, and utility DSM program representatives as appropriate.

In addition to on-site assessments, the Colorado Industrial Challenge and Recognition Program will offer other forms of technical assistance to industries in the region, such as reviewing calculations on the feasibility of projects, reviewing proposals from vendors or engineering firms, pointing companies towards utility DSM incentives, one-on-one advising about best practices for technologies or processes, answering questions about individual technologies, bringing to their attention any pertinent emerging technologies, advice regarding energy savings monitoring and verification, and even tips for facility managers on making the business case for energy efficiency improvement to upper management. We anticipate a tiered approach where companies get an initial number of hours free, additional free hours once they sign a commitment agreement to fully participate in the program, and finally, cost-share 50/50 for extensive project support beyond the hours provided free.

Workshops for partners and potential partners may include topics such as DOE/ITP End User Training on best practices for industrial technologies and processes (steam, compressed air, motors, pumping systems, etc.), as well as energy management. The workshops will be aimed at engineers, operators, and facility managers from larger plants and will be customized to assist attendees with meeting their energy reduction goals. Attendees whose companies have not signed voluntary commitment agreements will be encouraged to do so. Webcasts on topics such as case studies of implemented projects, utility industrial DSM programs and incentives, emerging technologies, ANSI certification, and ITP Save Energy Now resources will complement face-to-face workshops.

Assuming there is sufficient demand, we will bring together an industrial energy mangers' roundtable on a regular basis to discuss partners' efforts to reduce energy intensity, share best practices and lessons learned, review resources available, obtain feedback on what additional support is needed, and ensure our program is as targeted and effective as possible.

As we engage successful partnerships we will publicize successes to promote the industry's efforts and resulting benefits, including non-energy and environmental benefits. Companies that implement noteworthy energy-saving projects or reach their energy intensity reduction goals will get recognition and publicity through such means as a press release from the Governor's Energy Office, a case study of the project, a highlight on the program website, or annual awards issued by the Governor's Energy Office. We also plan on developing a template for an intra-company announcement, help communicating the success to print, radio, television, and internet media, and/or any other appropriate assistance. These promotional efforts serve to further educate stakeholders and help build goodwill with Colorado's industries.

To help ensure the program is as effective as possible we will set up an advisory board as well as seek regular interaction with key industrial energy efficiency organizations including utilities, energy service companies, trade associations, non-profit organizations, and other government agencies. We also hope to develop champions among company CEOs and other top officials to help promote the program to their peers. Furthermore, we will create an industrial energy efficiency feedback loop by tracking key decision-making criteria and energy efficiency resources within companies (including payback period requirements, financing criteria and needs, efficiency motivations, etc.) and presenting this information in aggregate to utilities and state government to better serve industrial company needs.

**Benefits of Joining**

We anticipate marketing the program based on a combination of energy and non-energy benefits, as shown in **Figure 3**.

**Figure 3. Benefits to Companies for Joining the Colorado Industrial Energy Efficiency Challenge**

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|---|
| Receive public recognition for innovation and energy leadership |
| Jumpstart improvements to plant processes, functions, and operations, while maintaining plant reliability |
| Identify new opportunities for cost savings |
| Get expert help in evaluating projects with the shortest and quickest payback periods, highest overall lifetime savings, highest technical viability, and lowest downtime |
| Reduce impact on the state, regional, and global environment, without a negative effect on operations |
| Access the latest expertise in industrial energy efficiency |
| Engage with other partner companies demonstrating success in energy management |
| Integrate energy decisions into overall corporate strategy |
| Develop a baseline of energy use |
| Create a lasting record of efficiency accomplishments |
| Reduce climate change emissions |
| Increase employee and customer loyalty |
| Serve as a model for other businesses |
| Be among the first businesses to implement the ANSI Plant Certification and the International Standard on Energy Management, currently in development |
| Help move Colorado's industry to a New Energy Economy |

## Inspiration and Ideas

In designing the program and looking at how other programs are organized, we did not find many similar state-level programs that offered the combination of voluntary energy intensity reduction goals, technical assistance, and recognition. We did, however, find local, national, and somewhat-relevant regional ones.

One program we are following closely, and part of the inspiration behind putting this measure in the Colorado Climate Action Plan, is the successful City of Fort Collins Climate Wise program. Climate Wise is open to all Fort Collins businesses and offers technical assistance, trainings, a participant network, and recognition for businesses that join in reducing greenhouse gas emissions through energy savings, pollution prevention, water conservation, and alternative transportation. The program has grown to 120 participating companies in this mid-size city, continues to grow, and is quite well-known throughout the city limits. In 2007 alone, Climate Wise partners reduced 82,421 tons CO2e and saw energy and water cost savings of $4.5 million. Since 2000, the program has seen cumulative electricity savings of 207 gigawatt-hours and natural gas savings of 4.2 million therms (Fort Collins 2009).

Another model for the Colorado program is the Canadian Industry Program for Energy Conservation (CIPEC), run by Natural Resources Canada. This program now boasts more than 1300 participating industrial companies, known as CIPEC Leaders. In place since 1975, CIPEC "stands out as one that is more successful" amongst national completely-voluntary industrial

efficiency programs according to a global review by Lawrence Berkeley National Lab (Price 2005). Industrial companies that make a formal commitment to energy efficiency gain access to CIPEC's workshops, retrofit incentives, assessments cost-share, a host of technical information, and recognition and awards. CIPEC has grown to be the focal point for Canadian industry response to climate change.

Some of the other programs and organizations that we looked to for ideas include EPA Climate Leaders, Northwest Energy Efficiency Alliance (NEEA), the New York State Energy Research and Development Authority (NYSERDA), the Energy Center of Wisconsin, Texas Industries of the Future, and some utility-specific programs such as those offered by Xcel Energy.

## Snapshot of Colorado Industry and Industrial Energy Use

Like other Western states Colorado has seen a rapid population increase, but its energy use has grown 50 percent faster than population (2000-2006). Industrial energy consumption in particular has increased 150 percent faster than population over this same time period (see **Figure 4**). While this doesn't reflect changes in energy intensity (energy use per unit of production), it still puts the spotlight on the great need for industrial energy efficiency.

It is safe to say that most of the industrial sector growth, like the residential and commercial growth, was not built as efficiently as it could have been, due to a focus on minimizing first cost rather than lifecycle cost.

**Figure 4. Snapshot of Colorado Industry and Energy Use**

| | |
|---|---|
| State population growth 2000-2006 | 10.5 percent |
| State energy consumption growth 2000-2006 | 15.6 percent |
| State industrial energy consumption growth, 2000-2006 | 26.6 percent |
| Average industrial electricity price | 6.5¢/kWh (national average is 7.3¢/kWh) |
| Percent of U.S. industrial energy consumption | 1.2 percent |
| Percent of Colorado private-sector workers in the high-tech industry | 8.3 |
| Number of industrial firms participating in EPA Climate Leaders | 3 |
| Number of completed DOE Save Energy Now assessments | 2 |
| Number of Colorado firms in DOE's Large Energy Users Database (a list of the U.S.'s 3,798 largest industrial energy consuming firms) | 32 |
| Total energy consumption 2006 | 1,428.1 trillion Btu |
| Total industrial energy consumption 2006 | 388.3 trillion Btu |
| Total industrial energy consumption rank | 27 |

Sources: Geographic Midpoint 2009; EIA 2007; EIA 2009; AEA 2008; DOE 2005; DOE 2009b.

Colorado has a diverse economy still dependent on traditional extractive industries like mining, oil, and gas, but is building up a large concentration of scientific research and high technology. Other top industries include food processing, breweries, machinery, and chemical products.

Recently Colorado has been successfully using its scientific and high-tech base to further attract new green-economy jobs, a growing specialty of this area. For instance, the Danish company Vestas, the largest wind turbine manufacturer in the world, is building its North American headquarters and three blade, nacelle and tower manufacturing plants in Colorado. This in turn is spurring growth in Colorado's supply chain to serve these industries. Woodward Governor, for example, is adding a new production line expanding its wind turbine inverter business. Numerous solar and bioenergy companies are also establishing research or production facilities in the state. We anticipate this trend will continue to change the face of Colorado manufacturing.

Our program will define our target industrial audience as manufacturing plants plus water and wastewater utilities. At present we do not expect to include other large users such as universities, hospital complexes, or most military sites.

**A Look at Colorado Industrial Prices and Rebates**

Just over a quarter of Colorado's energy consumption is in the industrial sector. Industrial electricity prices in Colorado are below the national average (6.5¢/kWh compared to 7.3¢/kWh as of November 2008) so the monetary incentive to save electricity and the payback periods for common energy efficiency equipment upgrades is not as large as compared to that in other states (EIA 2009). One assignment of the CIEEC program will be to help connect industrial energy users with any available grants, incentives, and rebates to make energy efficiency more affordable.

A few utilities, notably the large investor-owned utility Xcel Energy, offer comprehensive rebates and other programs aimed at the industrial sector. Xcel Energy provides rebates for any industrial project that saves electricity and/or reduces peak power demand. The utility also implements process efficiency, motors and motor systems, and industrial self-direct programs, along with natural gas efficiency programs for its full service gas customers. However the majority of its industrial customers are transport customers, not full service customers. Some of the smaller utilities in Colorado offer (or are planning to offer) energy assessments and rebate programs as well.

**Identifying Companies to Join the Partnership**

The Colorado Industrial Energy Efficiency Challenge will begin by targeting the 100 largest industrial firms in the state. Smaller firms will still be welcome and encouraged to join, but initial marketing and outreach efforts will be focused on larger companies. This is primarily because we expect to see greater savings in a shorter amount of time by focusing on larger firms. In addition, one of our partners in implementing the program, the Colorado State University Industrial Assessment Center, has already been providing energy assessments for Colorado's small-to-medium industrial firms since 1984, and will continue to do so—so it is assumed this subsector is already receiving at least some support. Furthermore, we assume that program

participation by larger firms with wide name-recognition can help bring in smaller firms, while the reverse would be much harder to accomplish.

Identifying the top energy-consuming industrial companies has not proven to be a straightforward task. No exact list exists, but we are compiling an inexact one from multiple sources:

- DOE Large Energy Users Database (out of a list of 3,798 of the largest energy-consuming industrial companies, 32 are in Colorado)
- List of largest NOx emitters from the Colorado Department of Public Health and the Environment
- Business directories with listings by NAICS code, number of employees, and sales revenue
- Coordination with utilities (utilities will likely not be willing to pass on a direct list but may refer some of their customers to the program)
- Working with municipalities to identify the large industrial firms in their city

**Geographic Considerations**

Most of Colorado's industry is located in the populous area known the Front Range urban corridor (extending from Pueblo through the Denver metro area, and north past Fort Collins). As such, this is where we will focus much of our efforts. Although there are more industrial firms along the Front Range than in other parts of the state, this doesn't mean that the program should or will neglect the other areas. Rather, we recognize the importance of gaining early participation of at least a couple companies on the Western Slope—roughly the half of the state west of the mountains—active in mining, oil and gas, and fruit farming industries.

## Early Response by Industry

In advance of the formal launch of the program, we have been meeting one-on-one with a handful of prominent industrial companies with the goals of:

- Getting their feedback on program design;
- Identifying and fixing any potentially problematic issues before the program goes "prime time;" and
- Getting early buy-in from several (up to a dozen) companies who will then be announced at the program's official launch event.

Through these meetings, we are getting a snapshot-in-time of their approach (and commitment) to energy management/energy efficiency; recent and current industrial energy efficiency efforts; their impressions about energy efficiency and what could or should still be done at their sites; their perceptions about limitations of energy efficiency itself, and their perceptions of assistance efforts such as audits. These contacts have produced several conclusions and observations.

**Payback Periods Shrink in Today's Economy**

One thing we have learned is that payback periods required for undertaking any capital project range from one year ("actually, 11 ½ months," says one facilities executive) to between two and three, depending on the company. "Any exception to that," said another facilities manager, "would have to be either extraordinary or tiny." And the necessary payback period has dropped as profits and investment dollars have been curtailed in this very challenging economic environment. For example, one environmentally conscious electronic products manufacturer indicated it now requires a one to two year payback for energy saving projects, in contrast to a three to five year payback a short while ago. It remains to be seen if these criteria will loosen up as economic conditions improve, energy prices increase, environmental regulations including greenhouse gas regulations strengthen, and/or as a result of the efforts of the CIEEC.

**Help with Evaluation is Appreciated**

"In our department, financial resources barely cover what they need to as it is." Thus, the facilities managers mentioned that assistance in identifying and evaluating energy efficiency opportunities and the payback for such measures would be useful. This was somewhat interesting given the relative availability of free or low-cost onsite energy assessments available from other sources, including local utilities. Even a company that was already engaging a private firm to look for plant energy efficiency opportunities told us they were interested in having a second set of eyes look at the issue.

We don't take this to mean that full-day onsite energy assessments (or three-day onsite assessments that focus on only one system) are the only way to provide help in identifying and evaluating energy efficiency options for a particular company. Given a limited program budget and the cost of such assessments, as well as our desire to help the largest number of industrial companies as possible, we aim to try supplementing these traditional energy assessments with a set of more flexible options, yet to be determined in more detail.

**Energy-Saving Opportunities are Likely to be Specialized**

The companies we talked to have already been involved in substantial internal efforts to improve plant efficiency, driven in part by cost reduction but more notably by corporate greenhouse gas reduction or environmental sustainability goals. Thus, they seemed fairly confident that the remaining opportunities for energy savings would be found in less-common places. While brainstorming what those could be, for instance, no one mentioned typical energy-consuming sources like motors, drives, pumps, or steam. Although these systems at these and other companies may well still be imperfect, the more specialized equipment and systems were deemed to have the best chance of finding energy savings. One-on-one technical assistance will clearly be required for such specialized issues, but beyond that, it will present a challenge to our program in designing trainings and webcasts: to find topic areas that narrow enough to fit the interests of certain companies yet still relevant enough to gain participation by enough companies.

Furthermore, the manufacturing firms' energy efficiency and sustainability efforts extend beyond the manufacturing floor. One company says more savings may be found in their office

space, even though by far the vast majority of their energy use is used in the manufacturing process—simply because the manufacturing process has received much attention and the office space hasn't.

### They Don't Say "It's Not Worth the Effort"

Previous research into commercial business owners' attitudes about energy efficiency identified the unfortunate common perception that energy reductions are unlikely to be worth the effort (Payne 2000). While this research was not conducted amongst industrial energy managers but rather among smaller business owners, there are probably some industries that feel that way. The companies we met with, however, recognize very clearly both the economic and the environmental benefits and were well-versed in both. The energy managers themselves seemed committed to continuous energy and environmental improvement—within the limits of their budgets and access to capital investment capital dollars.

### Public Profile has Extended to Energy and Sustainability

The companies want very much to be seen as a "good corporate citizen," especially amongst Colorado residents. While this could be expected of public relations and media relations personnel, in these cases it was made very clear by facilities personnel. In regards to our program, the opportunity for a company to be recognized by the governor was deemed a very high-value benefit of participation, essentially as proof of effort in good corporate citizenship.

### Extraneous Time Requirements Must Be Kept Low

Each company unsurprisingly prefers that the program's paperwork requirements be kept to a minimum—ideally just a simple end-of-the-year report that mirrors that of other programs they are in (such as the City of Fort Collins Climate Wise program or EPA Climate Leaders). It was implied that any more than that would be reason enough to not participate.

## Confronting Challenges

We don't know yet what the industry response will be to the launch of our program, and while we hope it will be nothing but positive, below is a sampling of some of issues we predict may be raised and how we expect to address them.

### The It's All Been Done Already Syndrome

One anticipated response to the program is "this already been done before," or "we've already looked into that [and have done all we could]." However, this is a new chapter for energy efficiency, and we hope our program will reflect that. Never has energy efficiency featured so prominently in the news, on the political landscape, or in everyday conversation.

In addition to growing popularity, the tools and resources continue to advance. The new ANSI-accredited Energy Efficiency Plant Certification and ISO Standard on Energy Management currently in development are an example of this (Superior Energy Performance 2009). Both the certification and standard, designed to integrate into existing corporate

management standards, will together offer a consistent, practical, and performance-based approach for achieving and validating continuous improvement in energy efficiency. Furthermore:

- There is new funding available to help offset the costs of energy efficiency investments, whether from utilities or other sources, and the program will help end users find and apply for these.
- Even if a company has already looked for energy efficiency opportunities at its plant, assessments by different people or different organizations can uncover new opportunities.
- Technologies have advanced since even five years ago.

**Getting Buy-in From Both Facility Managers and Executives**

We know that a company's participation in a program is more likely to fail—or at least not do as good as it could—if upper management signs on a company without adequately consulting the facilities or energy manager first, expecting the facilities staff to "get it done somehow." Conversely, if a facilities manager participates in a program without having commitment from upper management, full success is again less likely (usually due to lack of budget allocated to meeting the program's goals).

To avoid this possible disconnect between facilities-level personnel and top corporate management, we have three ideas. First, at the launch event and annual recognition events, energy managers and upper management both will be invited and encouraged to attend, in order to emphasize the company-wide importance of energy efficiency, strengthen the lines of communication between energy managers and upper management, and get buy-in for the program at every level. Second, the partnership agreement that specifies each company's voluntary commitment to the program and specific energy intensity reduction target will ask for a signature from both an energy manager (or facilities manager) and a senior company official. Additionally, if warranted, the topic of communicating energy efficiency benefits and/or results to upper management could be the topic of a webinar or a facility mangers' network discussion.

**Maintaining Confidentiality**

Companies are likely to be concerned about the potential release of private data through their participation in the program, especially since it is run by a public entity. To address this, we are establishing some confidentiality procedures that can protect what is deemed confidential and internal, while still maintaining the ability to promote the program itself, the partners in the program, and the achievements they have made.

Each company's own energy reduction goal will not be publicly revealed, unless the company chooses at its discretion to do so for reasons of positive public relations. Whether they meet their goal or not will also not be shared with the public. (To combat greenwashing, though, companies may be removed from the program after long periods of inactivity.) Furthermore, we will not disclose any other information the partners say they want kept confidential.

One of the benefits of the program, though, is public recognition for companies' accomplishments and successes in advancing energy efficiency. In cases where a company might be featured in a case study, brochure, press release, website, presentation, or publication, that

information will in most cases be cleared by the company prior to being publicized. Aggregate information (for example, the amount of energy saved in a given year by all partners) will also be compiled and used.

## Conclusion

The Colorado Industrial Energy Efficiency Challenge will bring together Colorado's forward-thinking industries with technical experts and resources in a partnership to tackle energy, economic, and environmental challenges through industrial energy efficiency. This program is designed to help Colorado meet the targets set within the Governor Bill Ritter's Climate Action Plan, while strengthening the productivity and competitiveness of Colorado businesses. The sponsors of the program welcome feedback and the opportunity to share experiences with similar regional, state or local programs once we move ahead with program implementation.

## References


AEA. 2008. *Colorado's Tech Industry Totals 157,200 Jobs: Colorado Remains 3rd in Concentration of High-Tech Workers.* Broomfield, Colo. www.aeanet.org/PressRoom/prjj_cs2008_colorado.asp

[DOE] Department of Energy. 2005. *Large Energy Users Database*. Washington D.C.

———. 2009a. *DOE Awards Funding to 12 State Entities for Industrial Energy Efficiency Programs.* Washington D.C. www1.eere.energy.gov/industry/newsandevents/news_detail.html?news_id=12271

———. 2009b. *Industrial Technologies Program Activities in Colorado*. Washington D.C. www1.eere.energy.gov/industry/about/state_activities/ map_new.asp?stid=CO

[EIA] Energy Information Administration. 2007. *Colorado Electricity Profile: 2006 Edition.* Washington D.C. www.eia.doe.gov/cneaf/electricity/st_profiles/colorado.html

———. 2009. *State Energy Profiles: Colorado Quick Facts.* Washington D.C. http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=CO.

City of Fort Collins. 2009. *Climate Wise.* Fort Collins, Colo. www.ci.fort-collins.co.us/climatewise/

Geographic Midpoint. 2009. *Fastest Growing US states 2000-2006.* www.geomidpoint.com/population/states-2006.html

Payne, Christopher. 2000. *Utility Bill Comprehension in the Commercial and Industrial Sector: Results of Field Research*. Berkeley, Calif: Lawrence Berkeley National Laboratory. http://repositories.cdlib.org/cgi/viewcontent.cgi?article=6064&context=lbnl.

Price, Lynn. 2005. *Voluntary Agreements for Energy Efficiency or GHG Emissions Reduction in Industry: An Assessment of Programs around the World.* Berkeley, Calif: Lawrence Berkeley National Laboratory. http://ies.lbl.gov/iespubs/58138.pdf.

Ritter, Bill Jr. 2007. *Colorado Climate Action Plan: A Strategy to Address Global Warming*. Colorado. www.colorado.gov/energy/in/uploaded_pdf/ColoradoClimateActionPlan_001.pdf

Superior Energy Performance. 2009. www.superiorenergyperformance.net/