



**State Clean Energy-Environment Technical Forum
Conducting Energy Efficiency Potential Studies
March 13, 2008
Call Summary**



Participants: 39 registered participants from 21 states and national organizations

Materials: The participant list, agenda, and all presentation materials from this call are available at http://keystone.org/Public_Policy/2007_8DOCS_CLEANENERGY/2007_8DOCS.html. Please refer to these documents for additional detail on presentations.

Key Issues Discussed

- Purposes and types of potential studies
- Examples of potential studies and how they have been applied
- Challenges of preparing potential studies

Summary of Presentations

A. Welcome/Introduction – Julia Miller, Climate Protection Partners Division, State and Local Branch, US Environmental Protection Agency (EPA)

EPA continues to welcome ideas for call topics from participants and others interested in these issues.

B. Overview of Types and Uses of Energy Efficiency (EE) Potential Studies - Niko Dietsch, EPA State and Local Branch

- ***The Guide for Conducting Energy Efficiency Potential Studies*** is a product of the National Action Plan for Energy Efficiency (NAPEE) to help states preparing potential studies be more strategic. EPA prepared this report and solicited feedback from the leadership group for the NAPEE.
- **A potential study is a quantitative analysis of the amount of energy savings that exists, is cost-effective, or could be realized through efficiency programs and policies.** Studies can focus on one or more fuel types, one or more specific geographic regions, and/or one or more sectors or industries. Potential studies can be policy tools, assisting in tasks such as setting energy savings targets, quantifying EE as a resource, and determining funding for EE programs.
- **EPA recommends that anyone preparing a potential study follow five key steps:** 1) identification of the objective of the study and the audience; 2) selection of the type of potential (technical, cost-effective, feasible) to analyze; 3) determination of the appropriate level of detail; 4) selection and definition of the methodology, and 5) presentation of the results. Each of these steps is critical, and each one could impact how a study can be used to inform policy and budget decisions.
- **Costs and time needed to complete a study vary according to its purpose.** A study can be designed to meet the specific informational needs of leaders and decision makers. There are three primary policy reasons for conducting a potential study:
 - To build policy support and make the case for energy efficiency programs and funding
 - To evaluate efficiency as an alternative to a specific supply-side project

- To determine how much to spend on efficiency and how that money can be spent
- **There is generally a tradeoff between the level of detail in a study and the cost and time needed to complete it.** Studies with lower levels of detail tend to be less expensive and quicker to complete and can be excellent tools for building a case for straightforward policy decisions (yes or no to a particular program) and budget allocations. More detailed studies cost more and take longer to complete, but provide a greater understanding of issues that can help decision makers refine existing policies and programs.

Questions and Answers

How relevant are potential studies for local government entities?

It depends on the extent to which local governments are running EE programs. NAPEE is a national action document that focuses on EE programs run by states or utilities. Local governments are not in a position to be developing EE resources at the scale addressed in the Guide. However, entities with less EE experience can take advantage of the many opportunities outlined in the Guide, even if they lack the infrastructure to take advantage of all of them. Local governments can often just move forward with EE programs without an analysis of potential.

What is the applicability of the study approach to small businesses that may have electric motors and may want to consider changing them out for more energy efficient technologies?

There are a number of commercial EE measure characterizations in the Guide, including estimated life-spans, energy savings, and other relevant information.

Additional response from a participant: Small businesses would need a facility audit, which is not really the same as doing a potential study, and the Guidebook does not really get into doing that level of analysis.

C. Maryland: Getting Started - Walt Auburn, Maryland Energy Administration

- **Maryland was very proactive on energy efficiency and invested a lot of money into it prior to deregulation in 1999.** After deregulation, the state's spending on EE dropped to almost the lowest rate in the country. Funding has remained low since that time. However, at the same time, rates began to climb substantially, and energy costs have therefore become a major political issue for the governor. The governor decided to address energy efficiency, so **the state developed an EE program that aims to reduce per capita energy consumption to 7% or 8% below 2007 levels by 2015.**
- **Preliminary studies indicate that energy efficiency can be justified by both rising rates and the possibility of brownouts and blackouts as early as 2011.** Several foundations and the American Council for an Energy-Efficient Economy (ACEEE) helped fund the more detailed studies that would be necessary to make the case for new programs to the legislature.
- **Maryland completed its potential study in three months.**
- The study is policy-oriented, combined with some sector-level detail. **Its purpose was to assess resource potential for several sectors to see if the state's energy goals could be met.** The study also assesses potential impacts on jobs, wages, and gross state product.
- **Lessons learned**

- It may have been better to **allow more time** for the study; three months was not enough time.
- It is very important that whoever is hired to do a potential study clearly **understands the intended audience**. Direct outreach to those audiences is critical. Maryland's timeframe was so tight that they were not able to have in-person meetings with all the key stakeholders.
- If a study's purpose is to support the creation of new legislation, it is helpful to **ensure that tables and presentations of savings are calculated for the appropriate timeframe** so that no recalculation is required to give the legislators the information they need.
- **The process does not end when the potential study is done**. Studies have a finite usefulness and often need to be followed with more detailed analysis. Data on energy savings and costs from the field will need to be gathered and reconciled with any existing studies.
- **Outside funding help may exist**. Maryland benefited from financial assistance from ACEEE and several foundations. Utilities may be willing to assist as well.

Questions and Answers

Did the Maryland study produce any surprises?

It was surprising to see that lighting was potentially 49% of commercial energy use. The current appliance standards were lower than some people understood them to be. The measure-by-measure savings figures were really interesting, too.

Figures in the Maryland study seem to underestimate the potential energy savings from refrigeration in the commercial sector. Are these figures accurate, given the number of coffee shops, grocery stores, convenience stores, and restaurants who use refrigeration?

While it is possible that this generic item in our study does not include grocery stores, convenience stores, and restaurant, in general refrigeration is a small part of energy use in commercial buildings. Investments in other things may produce better payoffs in terms of energy savings. Lighting is easy to get and install, savings are predictable, costs are categorized as maintenance and not as capital, and benefits are substantial. However, once the first round of new lighting is installed, the second round does not produce similarly high benefits. Perhaps at that point, the relative potential for refrigeration increases.

The Consortium for Energy Efficiency (CEE) in Boston has model guidelines for lighting. They also have information and a replacement protocol for motors used in small businesses. For more information, visit www.cee1.org or call 617-589-3949.

D. Connecticut: Implementing the Study Results - Jeff Schlegel, Consultant to Connecticut Energy Conservation Management Board

- Connecticut began its potential study in 2003 because the legislature was considering reallocating funds from the EE program to deficit reduction, **and the state wanted to make a case for the many fiscal benefits there are to remaining engaged in EE efforts**. The study was updated in 2007 to include demand response and a study on gas potential is forthcoming in 2008.

- **The objectives for the study include estimating the maximum-achievable, cost-effective EE over a ten-year period.** Because there are several energy-constrained areas in the state, a geographical component was included in the study. Because the study was intended for policy and political discussions, it required a high level of data and analysis.
- **The study focused on technologies that were commercially available at the time it was written, so it may not accurately reflect the full potential in the future.**
- In addition to making the case that EE program funds should not be reallocated, the Connecticut study has been used in climate change policy discussions and other deliberations of the Connecticut Energy Advisory Board.
- **Recommendations for states who have not yet done a potential study:**
 - Be forewarned that **potential studies are technically and politically challenging, time-consuming, and expensive.**
 - Studies are often based on key **assumptions that may be hard to document**, posing potential problems later on.
 - In terms of payoffs, **it may make more sense to invest resources in implementing programs and working with customers than to do a potential study.**
 - Policy decisions may not ultimately be based on potential studies but on politics instead. **Studies are not deterministic.**
 - Before beginning a potential study, **it may be wise to first do some comparisons of surrounding states that have already done studies.** It may be possible to extrapolate data and save the time and money associated with a full potential study.
 - **Best practices studies that compile lessons for how to do things better in general and targeted market assessments that examine options for particular sectors may also be good investments.**
 - **Learn by doing**, and do not let study delays preclude early and aggressive action.

Questions and Answers

Are you expecting that with aggressive EE Connecticut can go into the future without new generation plants?

Connecticut has a low growth rate, so it is possible to have efficiency meet zero load growth. There may still be a need build generation to replacing retiring units.

How can potential studies be used to estimate co-benefits?

Potential studies can identify improvements in sulfur oxides and nitrogen oxides and in water use. Connecticut traditionally does this in its legislative reports, but the data are included in the potential study as well. Maryland's study estimated carbon dioxide reductions, as well as impacts to jobs and wages.

Is cost-effectiveness one of those assumptions that may be challenged later on?

Cost-effectiveness parameters are usually provided by a third party, and they can be controversial. While this may be difficult, it is actually more difficult to determine how much to subsidize customers to achieve maximum achievable savings or to determine how much savings is actually achievable.

NEXT TECHNICAL FORUM CALL: April 10th, from 2:00 p.m. to 3:30 p.m. ET
TOPIC: Performance Contracting