State Climate and Energy Program—State Technical Forum
Energy Efficiency Resource Standards
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Contents

Introduction

Julia Miller: …to unmute your line you need to hit #6. Alright, so we'll go ahead and get started. Welcome to the Tech Forum call. So I wanted to first thank all the speakers today for agreeing to talk on the subject. We're going to cover energy efficiency resource standards on the state level, and we're going to talk a little bit about what's going on at the federal level as well. We have Jeff Brown from the EPA State Climate and Energy Program. We also have Mike Sherman from the Massachusetts Department of Energy Resources. We hoped to have David Baker from the Department of Commerce and Economic Development. There was some question earlier today about whether or not he'd be able to join, so we will hope that he calls in as our call progresses. For those of you who haven't downloaded the background materials for presentations you can go to www.epatechforum.org and find all the resources, agenda, and background information there. With that, Margaret are you there?

Catherine Morris: We're both on. Can you here me?

Julia Miller: Great. So, we've got Catherine Morris and Margaret Pinard from the Keystone Center and they're going to be helping with facilitation and with some of the webinar software.

Catherine Morris: I think the one thing that we want to point out to the participants is that while the speakers are talking, if you have questions you can use the Q&A on the task bar on the right hand side of your screen. If that task bar is getting in the way you can minimize it with the arrow on the top half of that task bar to get that out of the way. We will try to stop in between speakers. It gives you time to ask clarifying questions, and then we have saved time at the end for Q&A. But you have two options for doing that. You can unmute your phone, or you can start typing your questions into us and we'll ask it for you. So with that I'll turn back to you Julia and Jeff.

Julia Miller: Great. So Jeff, do we have you there on the line?

Jeff Brown: Yes.

Julia Miller: Margaret, I'm having some issues with my computer, so do we have Jeff's presentation up.

Margaret: Sure, give me one second.

Julia Miller: I just want to announce really quickly that next month's Tech Forum call will be on EPA's Mandatory Reporting Rules for Greenhouse Gases. We're going to talk a little bit about what EPA has developed. We'll talk about how EPA and states can share data and work together on the development of the data system. That will probably be the last week of February and we'll send out a save the date in the next week or two on that. If we're all ready to go, then I will hand it over to Jeff Brown.

Energy Efficiency Resource Standards (EERS): An Overview

Slide 1: Introduction

Jeff Brown: Okay. Thanks, Julia. My name is Jeff Brown, and I'm from EPA's State Climate and Energy Program. I'll be providing an overview of energy efficiency resource standards at the state and federal level.

Slide 2: Summary Energy Efficiency Resource Standards

Jeff Brown: I'm going to be starting with a high/low summary of energy efficiency resource standards. Basically, establish a requirement for utilities and/or a requirement for administrators to meet annual and cumulative energy savings targets through portfolios on energy efficiency programs. 23 states have an EERS as of the end of 2009. These EERS are an important driver of ratepayer investment in energy efficiency programs and energy savings. The design and implementation, and details of these energy resource standards vary by states and, at the federal level, there is a renewable electricity standard with an energy efficiency component that is in the House passed, and the Senate Energy Committee passed climate and energy bills where the utilities are allowed to use energy efficiency savings to meet a certain portion of the renewable electricity standard. That's basically what we're going to cover today, and we'll go into more detail now.

Slide 3: EERS: Background

Jeff Brown: I already went through a few of these things but EERS establishes a requirement for utilities to meet energy saving targets through portfolio efficiency programs. We have 23 right now and many states have adopted these in the last three years. The vast majority of these EERS are stand alone energy efficiency resource standards although there are two states (like North Carolina and Nevada) that have combined their efficiency and renewable standards together, where efficiency is eligible to meet a component of the renewable standard. Most people consider energy efficiency standards complementary to other state energy policies, like minimum building energy codes or appliance programs or low income programs, but at least in the short term it's worth mentioning that this is drawn from the same pool of energy efficiency potential. In some cases coordination across the state efficiency policy is important. Ratepayer funded EE programs—developed to meet EERS in most cases—are projected to reduce national electricity demand by 5 percent by 2020. I have some graphical illustrations of a few of these things on the next few slides.

Slide 4: State EERS as of December 2009

Jeff Brown: This shows a map of the status of state EERS as of the end of 2009. The one caveat is that the state of Florida actually finalized its standard so that should be turning blue. So 23 states as of December 2009.

Slide 5: Graphs

Jeff Brown: On the next slide are a couple graphics from Barbos, et al. study from the Lawrence Berkley National Lab that looked at ratepayer energy efficiency programs. The top figure is on the spending side, and it includes both electricity and natural gas programs, and it shows how those are expected to ramp up over the next 10 years. They have a couple different cases. They have a low, a medium, and a high case. The low and medium cases are the predicted reactions based on existing state policy, so those are the ones I focused on when I referenced that 5 percent by 2020 number. The lower figure is the incremental annual electricity savings from ratepayer funded efficiency programs that they're projecting based on their assumptions. So that's based on existing state policy.

Slide 6: State EERS Designs May Vary

Jeff Brown: Like I said earlier the state EERS designs vary by state across a number of different variables including who establishes the targets. In some states they're articulated in the authorizing legislation. In other states the state utility regulator is the one who sets numerical targets. They also differ across states by the size and form of the targets. Some states just focus on electricity whereas others include natural gas in the targets as well. Sometimes they are articulated as a percentage of sales; that's usually the case. Although, there are two states that present the target as a percentage of sales growth. Texas is an example of that. States also vary by what is eligible to count towards the targets. All states allow traditional energy efficiency programs that provide educational incentives and give educational, technical assistance. So that's common across the states. There are resources that some states count and some don't, including savings from combined heat and power projects, from improvements to the electric distribution system, and even some kinds of savings from mandatory codes and standards. Finally, evaluation, measurement, and verification—how the state determines whether the utility of the program administrator met their targets. The requirements for these can vary across states as well. I think we'll hear more about some of these issues from the state speakers in a minute. With that, I'm going to move on to EERS at the federal level.

Slide 7: Federal EERS

Jeff Brown: A stand-alone federal EERS would do a few things. It would place a requirement on electric utilities to meet savings targets; it would prescribe types of energy efficiency investments that are eligible to count towards for the EERS and the allowable methods for estimated savings from those programs; and it would establish clear energy savings targets that can be utilized by utility/state/regional resource planning and forecasting. There are a few stand alone EERS at the federal level, including H.R. 2529 from Chairman Markey in the House and S. 548 by Senator Schumer. However, committee-passed federal proposals do not include stand-alone EERS: for example, H.R. 2454 (also known as Waxman-Markey) and S. 1462 from Bingaman in the Senate do not include stand-alone EERS. However, they do include a renewable electricity standard where energy efficiency is eligible to meet a portion of the standard.

Slide 8: Federal RES Bills (1)

Jeff Brown: I'm going to walk through in a little more detail those two bills and the efficiency-focused element—the renewable electricity standards from energy bills. They're pretty similar in

terms of the obligated entities. Both those are electric utilities with annual sales of 4 million megawatt-hours. Their target content will differ a little bit. In the House it starts of at 6 percent in 2012 and goes up to 20 percent in 2020 and beyond. And of those percentages, one-fourth of the target can be met with EE, although the Governor may petition to increase that percentage by two-fifths. On the Senate side, the annual targets start at 3 percent in 2011 and ramp up to 15 percent in 2021, and 26.6 percent of the target can be met with energy efficiency upon petition by the Governor.

So those are the nominal targets, but the way you determine the type of efficiencies and the amount of renewables you need to procure is by taking that nominal target and multiplying it by the base amount which is annual sales in a particular year adjusted for a few of the things you see in the next row. You, according to the bill, reduce that base amount by a few types of electric generation including hydro, which doesn't qualify for the renewable component, but generation by CCS and generation from new nuclear in the House bill. In the Senate bill you also reduce it by generation by municipal solid waste and from improvements to existing nuclear plants. That has the effect of reducing the amount of efficiency and renewables that are needed to comply with the RES.

Slide 8: Federal RES Bills (2)

Jeff Brown: In terms of the eligible energy efficiency resources, those bills include energy savings that happen at customer facilities, which are typically targeted by efficiency programs. They also include improvements to the distribution system and combined heat and power projects. The eligible mechanisms are similar to the kind of things states are doing to date. They require that the program administrators play a significant role in achieving the savings. And those schedules are explicit in excluding savings from mandatory building codes and appliance standards from counting towards the target. In terms of trading for energy savings, the bills differ pretty significantly. In the House bill, there's a more narrow provision that allows for trading of energy savings occurring and purchased in the utility's state and that meets the EM&V requirements. That trading can happen through bilateral contracts. In contrast, the Senate directs the DOE to establish a federal efficiency credit trading program.

Slide 9: Federal RES Bills (3)

Jeff Brown: The EM&V requirements both direct the administering agency—in the House bill it's the FERC and in the Senate bill it's the DOE—to prescribe standards and protocols for EM&V methods. The House bill allows states to allocate the authority to oversee this EM&V, but the Senate bill is silent on that.

Slide 10: Federal RES Bills (4)

Jeff Brown: In terms of state authority, both bills are explicit that states reserve state authority to adopt more aggresive standards. They also explicitly require federal regulators to facilitate coordination with the states. They differ in terms of which federal agency is overseeing the bill. In the House bill it's FERC; in the Senate it's DOE. Finally on the alternative compliance payment and the penalties, they differ a little bit in their amount. The Senate is $25/MWh and in

the House its $21/MWh that utilities can pay if they don't meet their targets. It's an alternative way they can achieve compliance. Any revenues generated from alternative compliance standards are returned to states for purposes of efficiency programs.

Slide 11: Additional Resources

Jeff Brown: So that is the summary of these two federal bills focused on the efficiency components of the RES. These are some additional resources for more information at the federal and states level. And the last slide is my contact information if you have further questions.

Slide 12: Contact Info

Catherine Morris: We have about a little over 40 people on the phone, so please take advantage of the opportunity to ask Jeff some questions about this before we move onto our next speaker. All you have to do is press #6 to unmute your line and you can jump right in. Any clarifying questions?

Questioner: Jeff, what's the timeframe on those bills?

Jeff Brown: So the House bill—the Waxman-Markey Bill—passed out of the House last year. The Senate bill has passed through the Energy and Natural Resources Committee and has yet to go to the House floor. So that's the current status of the bills.

Catherine Morris: While you were talking we had another request for the Web site where you can download the documents, including Jeff's presentation. That's www.epatechforum.org. I sent that out via the chat line too, so everybody should have it. Any other questions for Jeff? Well, thanks a lot for the overview.

Massachusetts: Driving Utility Energy Efficiency Efforts to New Levels

Catherine Morris: I will turn it over now to Mike Sherman after a quick introduction. Mike is the Director of Energy Efficiency Programs in Massachusetts in the Department of Energy Resources. He has responsibility for both the gas and the electric side of efficiency programs in planning and evaluation. Right now he's overseeing a plan to increase the programs' expenditures over the next three years. Their goal is to get more than 2 percent of the electric load delivered in the form of energy efficiency. Mike is going to tell you a little bit more detail about their energy efficiency resource standard in Massachusetts. Are you ready to go Mike?

Mike Sherman: Yeah, I'm ready. Are you hearing me?

Catherine Morris: Yes.

Slide 1: Massachusetts: Driving Utility Energy Efficiency Efforts to New Levels

Mike Sherman: Can you see it yet?

Catherine Morris: Yes, we can see your presentation, if you put it into slide view mode. There you go.

Slide 2: Efficiency is a Significant Resource

Mike Sherman: I just want to start by saying that, although we have an efficiency resource standard, it was enacted in 2008. In fact, efficiency has been a significant resource for some time and as you look at the first slide what it shows is the effect of different sources of supply against our total electric needs. As you can see, the fifth from the bottom there, these are percentages from 2008, it's probably closer to 10 at this point and that's a cumulative number which we trace back to improvements that have been made since 1991, as far back as we have records.

Slide 3: Over Time Efficiency Has Provided a Growing Percentage of Our Electric Needs

Mike Sherman: This second slide shows us the stream of savings that have come from the program going back to that time and also potentially the total of all of those little colored bars and the blue area behind it is our total electricity needs. So efficiency has been there and has been a significant part of the victory in Massachusetts. Massachusetts enacted back in 2008 a thing called the Green Communities Act, which is basically what we're going to talk about here too.

Slide 4: Energy Efficiency Resource Standards

Mike Sherman: This slide dates back about six months, so it's possible it's a little bit out of date by now, but it is from one of our consultants describing in a little bit of summary detail what the sources of resource standards there are out there, what the goals are, where there is an end date, and how they are set up. Massachusetts is third from the bottom of this one and its shows our

standards as all achievable cost-effective efficiency. Where going to talk about what exactly that means and how we're going to get there.

Slide 5: Massachusetts Standards

Mike Sherman: Here are two of the defining pieces of legislation. And the important thing about the Green Communities Act is their requirement to first acquire all available cost-effective energy efficiency less than the cost of supply. That mandate is placed both on the electric and gas utilities. That's what we have been doing. Our focus has mainly been on electricity, but the gas component is increasingly important. Additionally, in 2008, the Global Warming Solutions Act requires reductions of 10-25 percent by 2020 and savings actually going to 80 percent by 2050. This is probably something that many of you are familiar with. I think we are on the path of actually working ourselves towards that goal.

Slide 6: What Does All Cost-Effective Mean?

Mike Sherman: So what does all cost-effective efficiency mean? Some states have actually in place an integrated resource planning process. As you've seen in the previous slides in Jeff Brown's presentation, it talks about a very specific goal by a particular date. In our case, we had a more undefined situation that actually helps us in terms of planning. But we do have to have a regulatory finding by our utility commission. In fact, in the three year plans that the electric and gas utilities are presenting…the fact that they have made this to reach that goal of requiring all available efficiency for utilities. Our big three here are natural gas, electric energy, and CHP. We do look at electric demand, though it's never been a primary focus, although it is important. Also, for somebody who may not know, in New England, there is a Forward Capacity Market which also pays for demand reductions of the electric facility programs that participate in that. Non-regulated fuels are not specifically included, but we have been serving residential customers with oil and propane, and we may have an experiment this year on the commercial industrial side if the utility commissions take that particular initiative. We're hoping to move toward an all fuel regime in the very near future.

Slide 7: More Resources Under GCA

Mike Sherman: So we have more resources added under an electric utility restructuring law that was passed in 1997. We had a systems benefits charge, which more or less every year was $125 million/year on the electric side. Also there was gas efficiencies, which were done entirely through a separate process and that was through a three-five year plan and stayed fairly steady at $25 million. In 2009, we began ramping things up so that the total expenditures on the electric side were $180 million and gas increased to $30 million. Those are going to increase further. Our expenditure goals through 2012 are $2.1 billion and that should return us approximately $4 billion in benefits throughout that time. We've also had a decoupling order that was instituted in 2008 to take away the disincentives to doing further efficiencies for the utilities. Those decoupled proceedings have just gotten done.

Slide 8: Assessment Process

Mike Sherman: One of the questions in all this is what we actually do to establish that the utilities are seeking all cost-effective efficiencies. What we decided to do, since neither law nor regulations really told us, is through an energy efficiency advisory council established by the 2008 law, and as we develop an incentive process. Though we had several months to do this entire planning operation we decided not to do a typical technical potential study. Part of our reason for not doing that is our experience of doing these is that the tech potential studies tend to be conservative. They tend to miss or downplay technology changes, which raises confusion of technology. They tend to focus on end use and specific technologies. Really, something we think is critical for moving forward, which is really all facility approaches, which means cost-effective and behavioral approaches as well to really solicit people to change what they do and how they do that.

Furthermore, in tech potential studies, the achievable part of the study was to start with potentials and the total of what's out there, and then they're whittled down into what's cost-effective under the rules of that state. Finally you get to the achievable, which is the assessment of what out of all of that you can you really do. It seems that those studies don't help as well in a situation where you're trying to ramp up rather dramatically. We're going to do, starting next year, a market based study—we haven't really defined it yet—that will be done in time for the next plan, which will be presented 2012. I will say that our past technical potential studies, done over long periods of time, have generally show that we have decreased the amount of efficiency that's out there. In fact, the number each time tends to stay the same as technology changes path and people start looking at things and doing things they hadn't done previously. The studies that we have seen are frequently outperformed by what happens on the ground.

Slide 9: MA EE Electric Savings: What is Possible?

Mike Sherman: So what we did is, I'll show you this graphic, we showed you the ones we looked at. What would be the impact on electric sales? The red line at the top represents the business as usual without efficiency as sales are in Massachusetts. The blue line shows what the programs had been doing in the past several years, which is acquiring about 0.8 percent of the annual load. The purple and green lines are really our areas of investigation. They show 2 to 3 percent of sales—of load, rather—over the year and you see what those two lines do is they draw the curve down. And that's where we're working from, ISO New England's sales forecasts, and those are the best that we have from the region. Working in that area decreases the net amount of electricity that would need to be generated over time.

Slide 10: EE to Meet GHG Reduction Targets

Mike Sherman: And it also, as you can see in this slide by looking at the dotted line. Also those dotted lines represent greenhouse gases emission savings that would come from being in that particular ball park. We looked at that and kind of started out with that area in mind.

Slide 11: Assessment Process (2)

Mike Sherman: And then did essentially a meta-assessment of a variety of studies that have been done in New England, New York, New Jersey, Maryland, I think, Pennsylvania as well. Really

looking in similar climate zones, similar technology areas. And the consultant team came up with this graph last summer, which defined what they thought would really be the assessment of what was actually out there. As you can see from the graph, looking at the total electric side was between 2.8 and 3 percent. On the gas side being fairly close to 2 percent, a little above or a little below. So we're to the point of the process. We're at the point where reality really needs to set in.

Slide 12: From Assessment to Goals

Mike Sherman: In the planning processes, we all sat down with the utilities who worked on a statewide basis and then we tried to determine what the goals would actually be. What goals we could meet over the next three years. Some of the factors really that came into this were the program administrator estimates of what they can really do. They need to ramp up their staff capabilities; they need to ramp up contracting capabilities; they need to ramp up educational abilities; they need to ramp up quite a few other things here as well. As well as changing marketing and promotion dramatically from what's done previously. A big factor here is essentially what the total program costs and net benefits would be. We went through several stages of analysis over several months. A pool of performance incentives and negotiated those among the PAs for that time and also try to do some innovative things and how we would actually allocate that money. The final piece is the impact of rate and bills that would fall on customers, since the utilities have the ability to lay the additional distribution charges if the funds that were available to them or not accessible. Those were the factors.

Slide 13: Three Year Statewide Goals

Mike Sherman: So as you see here what we came out with on the final numbers were somewhat lower, but starting from where we were we got 0.8 percent in 2008. We were about 1 percent in 2009, and then going from 1.4 to 2.0 to 2.4. And then on the gas side, a similar but a little less steep ramp up, but nonetheless one that will happen. So that has been our plan, and all of that actually is currently in the hands of our utility commission, which is considering it and is due to give us their final decision at the end of this month. And then we will proceed onwards from there.

Slide 14: Massachusetts Electric Load in Potential Energy Efficiency Scenario

Mike Sherman: The last slide, which just basically looks at what will happen to electricity sales, again, if we are successful in meeting these goals. The top line, the blue line, is essentially where we were under the old regime. The gold line is the impact on sales, which is essentially a 23 percent decrease in total electricity sales by 2020. And the black line below that is the increase in efficiency. So, those are our goals. They are fairly aggressive. We think we have a fairly good chance of meeting them and, as of two weeks ago, we're working on implementation.

Slide 15: Contact Information

Mike Sherman: And here's my contact information. It will be posted on the Web site as well. So, thank you.

Questions and Answers

Catherine Morris: Great, Mike. Thanks a lot. It sounds like we are getting a little bit of background noise. If somebody who has unmuted your own line could re-mute your phone or hit *6 if you don't have access to a mute button. I'm just hearing a little bit of clatter in the background.

One of the questions that came in while you were talking, Mike, was: What kind of measures are most feasible for natural gas energy savings?

Mike Sherman: Well, the bulk of natural gas in Massachusetts, the bulk of the program and sales, have been to residential customers, so we are looking at energy retrofits on the electric and gas sides, which means air sealing, insulation, replacing heating systems. We've actually just eliminated incentives for window replacements. And also we've run the idea of an integrated electric and gas auditing program for many years, which leads customers into the programs themselves, so that what we're also doing is to really bring people the full repertoire or menu of measures whenever a customer touches it. And so that's a very different approach from what previously our programs tended to be—very measure specific. We are trying to turn the equation on its head and be very holistic in the way we go about this.

Catherine Morris: Thanks. Another question: You mention that you did evaluations of ratepayer impact. Is there a certain threshold of impact that you are hoping that you won't go beyond in terms of rates? Or what are you looking for when you do that analysis?

Mike Sherman: That was really an open question, and there was a line in the legislation that says it was necessary to consider rate and bill impacts. And so, under the direction of the utility commission, we set up a working group that developed models for what the impact might be. This was not the traditional ratemaking model. What we tried to do was model cases of participation for our residential and commercial customers. And, based on what we thought the impact would be at the customer level and really propagating the model across what would actually happen to customer rates. So, we had no specific guidelines.

We came up with a couple of conclusions. At the high end in 2012, if we were dependent on only our current sources of money—which are the system benefits charge, the Forward Capacity Market revenues, the Regional Greenhouse Gas revenues, and any additional distribution revenues—that on the distribution side we would see impacts ranging from probably 3 to 4.5 percent. And there was a feeling that that might not be acceptable within the community as a whole. We've had business and residential customer groups and advocates at all parts of this process. So one of the conclusions that we've come to and that we're actively pursuing is seeking outside funding in the form of co-funding. I believe there are several other states that are moving down that path as well. So we wrote into the 2011 and 2012 plans that we would have approximately 3.3 million dollars in outside funding, specifically to mitigate the rate and bill impact. We don't know what that funding is at the moment. We are actively investigating that, and we're also pursuing a companion process in looking at on-bill repayment and doing that in an organized way across the board to remove customer barriers for whatever money they have to put out.

Catherine Morris: Well, I have a couple more questions waiting, but let me open it to other folks on the phone. If you want to, hit #6 and talk directly to Mike and ask him some questions. When you do, if you could introduce yourself and your organization in advance, that would be great. Okay, well let me go ahead and… Here are some questions that we've been getting online.

One of the questions that came in was regarding the audit program and whether the auditor is assigned to actually walk people through the specific improvements that they could make and the contracting process.

Mike Sherman: Ok. We have a program in place called the Residential Conservation Services, which actually started as a federal law in 1979—sorry for the history. We've been doing audits all this time, but for the last several years have added implementation to the audit process and are now actually totally restructuring that whole process. So what we're doing now is to bring a process in where we will do a simple walk-through inspection followed by an air-sealing process—which will be something that will be available to any customer at no cost in a one- to four-family home—and then at that point explaining to people what is available to them in the way of incentives and then also loans as well. So, we are at the moment using the rate from the residential side as their 75 percent of measured cost up to $3,500, but we will probably scale that back after a while. But, given this economy and the need to bootstrap everywhere, we are staying at this level for now.

So, we're trying to make it very easy for people in getting over those initial barriers. In some cases, what we're going to have is the contractor who does the audit will have a link as well to a set of contractors who have agreed to participate and accept those prices at a statewide level. We're working that contractor-price situation out right now. It's a bit different than we've done. So the contractor arrangement in bond cases would be done by the utility it's represented. But we're also trying to make room for other contractors at this point, so we're doing a little bit of both of those things.

Catherine Morris: That might fit partially into another question, which was: who is actually delivering the audit? Is it the utilities or is it an independent organization? And the energy efficiency measures themselves?

Mike Sherman: The utilities are required to use competitive procurement to deliver most of their services unless they provide that in-house. So 95 percent of all of the services, audits and implementations and even mostly technical assistance comes through competitive contracts, which up until now have been long-term contracts. We've got a small number of competitors on the residential side and we're hoping to increase that to create a more competitive environment and to bring in a little more innovation than previously. So, that's generally the process. And, ours is a very utility-centered process because our judgment has been that it's worked well over many years. Other states have taken other paths and I think it's really important to understand what works well in your particular state.

Catherine Morris: Can you say a little bit more on how the performance incentives are structured for the utilities?

Mike Sherman: We've always had a performance incentive mechanism. During the system benefit charges, the electric utilities were not able to recover lost base revenue. Gas utilities were. So what we did there is we had a budget-based performance mechanism that had three components. One of them being the energy savings, the second one being the value of the savings—the idea being that you don't just look for the cheapest possible savings, but you look for savings that will have the longest impact and you balance those. And the third piece is a metrics piece with specific things that we negotiate that we might want to do. For example, there are pilots on peak energy saving retrofits that may involve expenditures in the $40,000 to $60,000 range per home, and we're using those to look at where there may be cost-effectiveness going forward. We're not sure where the boundaries are.

So, that performance incentive mechanism has been in place for many years. We changed it in two significant ways this time around. We are going to base the performance incentive itself on actual performance as opposed to budget, and also for each of the next three years we developed the pool incentive, the notion being that if utilities want to be a little more aggressive with their sum opportunity to reach into the pool a little bit. It's really to confusing to try to describe it in this environment. You need the visual aid. But, that's what we're continuing to do. And the other part of this is the decoupling takes away the disincentive for expanding, since we have a restructured environment here. Utilities do not sell electricity, so therefore they actually have to make some money doing energy efficiency, so that's our environment. In a typical utility environment, I think the mechanisms work a bit differently.

Catherine Morris: Another question was whether or not your program encompasses the 40 municipal utilities in the state. Are they covered or voluntarily participating in some way?

Mike Sherman: No, they're not, which is unfortunate. When restructuring was passed in the late 90's, they had the opportunity for an opt-in provision, which they decided not to take. And there's a no direct path with that thing. The Residential Conservation Service program, which is in the audit program, does apply to municipal utilities, so they are all required to do an audit program and all 40 of them do that. A small number provide any significant incentives, but people who live in the municipal light district communities, if they have a natural gas provider, can participate in the program that way. So, that's a problem to be solved going forward, and it's not clear what the route to doing that might be at the moment. So, just one last thing. The 40 municipal light districts represent approximately 19 percent of the load, just to give you a sense of scale.

Catherine Morris: That's pretty significant. Well, one of the other questions that we were hoping you might be able to get into and that one of our participants is asking is how the federal funds have changed your overall program targets or the way you are implementing the program? I mean, have the ARRA funds maybe given you the capacity to go for those much deeper energy efficiency savings or really cracked into your targets at all?

Mike Sherman: So far what we're doing with the ARRA funds is follow tit for tat. So, with the moneys that were under our agency's control, we put out an aggressive RFP for something we are calling Retrofit Ramp Up encouraging really creative, some community-based, programs. And when those awards are made some of them will involve working with the electric utilities to extend the reach and the depth of what they do. But we have not made decisions to put any of the funds directly into the utility programs. There has been some suggestion that we might use some ARRA funds to create a funding pool to generate some of this outside funding that we talked about. So far, we are not going in that direction. We're really trying to follow a parallel path with the ARRA funds, rather than thinking of what the utilities can do further because they've got plenty of resources right now.

Catherine Morris: Well, our third speaker has not joined us. We were hoping he might jump in a little bit late at least. So, Jeff, if there are any other comments that you want to add or any questions for Jeff or Mike, we have plenty of extra time.

Jeff Brown: This is Jeff. I did have one more question for Mike. I was wondering if you could talk a little more about your plans post-2012. Are you going through the same kind of process during the next three years or can you talk a little about the process going forward?

Mike Sherman: Sure. What we're doing basically three year plans on into the undetermined future. What we will be doing is we'll be starting another planning process—we're actually probably starting it here early, some time in 2011. What we've been thinking about in terms of the overall ramp up is that in these three years we ramp the program up fairly sharply because the mantra that we are using is to go deeper and then broader. So, basically take this three year period and figure out how we can get better savings per home and per business than we get now. So, the move from the 7 to 10 percent range of savings in the residential homes to 20 to 25 percent and perhaps even deeper. And then once we get to that point, that we basically spread that model broader. So, following 2012, we would expect that the rate of increase would be quite a bit less than it will be over the next three years. It might be fairly flat, but I think we'll also see that there are going to be technology changes and other things that happen that open up opportunities that we can't see today.

Catherine Morris: You're going to have to help me with this question, Mike. One of our participants asked whether or not you are supporting the HEET program concept. Maybe you can explain what that is.

Mike Sherman: It could be a couple of things. We have something called the HEET loan, which is a loan program that the legislature required of us in 2005 and again in 2008, although we did continue the program all that time. What that does is simply to provide loans for residential customers in one- to four-family homes to come up with the additional funds to do some of the deeper, more expensive items. The things that have been principally involved in that program have been replacement of heat systems and windows. Although windows are not the best payback, they are attractive to people and they are expensive. So, we've had an average of about $8,000 per loan. These go out at zero interest for the customers and we subsidize these at whatever the current interest rate is—currently about 7 percent down at the banks. That's been a very successful program, and we have had something like 15,000 loans altogether. And if we

develop the pool funding concept, which will not require individual credit investigations as the HEET loans does, we will probably roll that effort into it. We're looking at that as another way of overcoming the barriers of capture. So, that's been a successful thing.

To point out one other thing… In Massachusetts, which is on a model called pay-and-save, the notion in that one is that you're doing a financing project which basically results in a positive net cash flow to customers. And some peoples' notion is that that's hard to do in a heating-related measure. So, all of the electric utilities were required to do a pilot, but the amount of both residential and commercial customers at the start of the program was really tiny in terms of what could be invested, and I'm not sure that it helped us very much. We are still looking at the notion that cash flow should be positive over the lifetime of any loan investment. Potentially, if we can do that on an annual basis, that would be extremely good or make it more attractive to customers, but it may not be possible in some states.

Catherine Morris: Well, it actually turns out—I got a clarification—that she was referring to Home Energy Efficiency Teams. That is a program that Cambridge started. Are you familiar with that? Gina, if you want to jump in and explain more, hit #6.

Gina: It's a weatherization program led by volunteers, but they have gotten a grant and they've been expanding it. I was wondering if DOER was involved or was going to maybe put some money into that model.

Mike Sherman: We have been involved in the Cambridge Energy Alliance since it started years ago at this point. And their original model, when the markets and the economy were quite a bit different, was to go out and do something like the HEET loans to basically provide very low cost advancement. And that model proved unviable with what happened to the market, so in the meantime they've been reorienting towards the volunteer model. I am not aware that they are seeking any funding from DOER. However, through the ARRA funding for larger communities, they may have the ability to use funding that would go to the city of Cambridge because they would qualify for that. I'm a little uncertain as to where they are at the moment with this model, but I know that they are continuing to pursue community-based efforts, bond-raising efforts, and getting volunteers to go out and do a lot of work. And we are also in cooperation with utilities looking at community-based efforts—again, another way of breaking down barriers, particularly in communities where people are speaking a variety of different languages and don't have the usual access to services and there's probably some issue of equity there as well. But Cambridge is going to stay on the cutting edge, and we're going to learn what we can from them.

Catherine Morris: Thanks, Mike. There's actually a question for you, Jeff, on the House and Senate bills. Wondering if you know any background on why they excluded building code efficiencies as eligible efficiency resource measures.

Jeff Brown: Yeah, I think it's related to the desire for the EERS to encourage some kind of incremental effort on the part of utilities in terms of delivering energy savings. If you look at the nominal targets and the percentage of the nominal targets that can be met by efficiency, those are pretty low numbers. If you allowed all of the energy savings that are projected to happen from state level and federal level building codes and appliance standards, then the EERS stuff isn't

likely to get you anything incremental. So, I think it's related to that. I think if the targets were much higher, they would maybe be thinking about it.

Catherine Morris: Did you want to, Jeff, add or highlight any of the situation between Massachusetts and Illinois? I don't want to put you on the spot, but I know you talked to David a bit about his program.

Jeff Brown: One of the things that I think is interesting about Illinois is that it has joint responsibility for meeting the targets between the utilities and a state agency. I think, based on what he was telling me last week, the utilities are essentially responsible for about three-quarters of the target, so they'll get about three-quarters of the money. And the state agency is focused on subsets of the market and is responsible for delivering the remainder of the savings target, which is a different model than a lot of other states did. They are more focused on utilities or, like in Vermont, use a third party.

Catherine Morris: And their target is much more specific? It's not all cost-effective?

Jeff Brown: Yeah, their target was articulated in the legislation specifically, but I think it also includes some caveats in terms of rate and bill impact and that the funding is not allowed to go above a certain amount on the rate impact side. So, that limits their ability to meet the long term targets, I think.

Catherine Morris: Well, for those of you who are interested in not only Illinois, but other states, we do have in the background document that's on the Web site sort of a short description of all of the states that have some form of EERS. So, that's a good document to look at to compare them side by side.

Another question for you, Mike, before we sign off here. Since we were talking about building codes and how they are integrated, do you have in your program specific restrictions against things like building codes or other sort of state policies being integrated into or counted as part of the overall targets and goals?

Mike Sherman: It's actually an interesting issue. The utilities in Massachusetts have always been very supportive of increasing the codes and have worked along—both in the residential and commercial sides—for years with us to boost those codes. In our 2008 legislation, we adopted the International Energy Code, as many other states did. And, since then, we have also adopted something that we are calling a stretch code, which is a voluntary set of standards which range roughly 15 to 20 percent more efficient than the current international code. And we had an issue with the utilities about how to determine what the baseline for savings is in those stretch communities. The argument was made that things that they are normally doing are things that they would just simply have to do. So, we've been working out essentially a special baseline in the stretch code communities as a way to deal with that.

But, the utilities have been very active. We'll be doing a set of workshops starting next month on the latest code changes and requirements for the code inspectors. So, we are not getting specific credit for the support the utilities provide. Essentially, we roll in the activities that they do in

support of codes in the overall cost-effectiveness of each customer sector level, rather than saying that there is a specific requirement. But, we don't give them specific savings either. But the cost-effectiveness bit is not a problem there. Does that answer the question? I may have gone a little afield on that.

Catherine Morris: No, that's great. And we actually have interest online in how people can find out a little more about the energy code seminars you just talked about.

Mike Sherman: Well, we are doing in-state training. If somebody wants to send me an email, I'd be happy to get the information. I think the first one has been scheduled and is just getting underway right now.

Catherine Morris: Can you just repeat your email?

Mike Sherman: Sure, it's mike.sherman@state.ma.us.

Catherine Morris: And one other topic that we really haven't touched on yet, which is the question of white tags and trading as an element of an energy efficiency resource standard. Is that something that you talked about when you were first formulating this particular approach and can you give us any insight into how you decided to handle that?

Mike Sherman: I'm expressing my personal opinion here, but I think it's our institutional one as well, which is I've never particularly liked white tags as an energy efficiency model. The largest concern being the monitoring and verification part of that. Although the model sounds like it should translate very well from RPS standards, for example—and we have one in Massachusetts which accepts renewables from within the region—my feeling is that the closer you look at it, the less well it works. On the other hand, Connecticut has a white tag process that they seem to be happy with so far. Our feeling was that it would lead down a path where we did not want to go.

Catherine Morris: Well, thanks. I'll leave it open for any more verbal questions before we close out. I am sorry we didn't have our second speaker, but you did a great job, Mike, in filling in more details. It's kind of nice being able to go in a little bit deeper and understand your program. Any last questions for Mike?

Jeff Brown: This is Jeff again. I have one more question for Mike. Can you talk a little bit about whether or not either the goals you've adopted over this three year period or your longer term look at potential through 2020? Can you talk about how that is being integrated into your utility resource plans or state energy demand or GHG forecast?

Mike Sherman: We are actually in the middle of a process to look at our greenhouse gas emissions and setting targets for 2020 right now. And so the utility programs are really an integral part of that. They are probably the largest single piece other than transportation. So, we take things quite seriously. One of the things we didn't talk about at all this session is the evaluation piece. We have a very robust evaluation process here, which I think we've made somewhat stronger over the past year. And so we tend to feel very confident in the net savings

that come out of our program. And those illustrations that I showed early on with the streams of savings—those were all evaluated savings; those are net of whatever factors that we look at. So, it's essentially an important part of the process. The utilities themselves, they are not generators, so they do not do their own plan. DOER has recently done a limited-focus energy plan, but we're going to be in the process of doing a much more comprehensive one probably during this next year. I'm not sure what the schedule is with all that. We're kind of busy running it. So, yes, it's a major part of the whole process.

Catherine Morris: Well, Julia, I'll hand it back to you to wrap up.

Julia Miller: Okay, great. Thanks, Catherine. And I want to thank everyone for joining us today and especially thank our speakers again for taking the time to join us. So, as always, if you all have suggestions for topics for future Tech Forums, please feel free to email me. It's miller.julia@epa.gov or you can email Catherine Morris at cmorris@keystone.org. And, once again, next month we're going to be talking about EPA's Mandatory Greenhouse Gas Reporting Rule, and we'll send out a save-the-date for that in the next week. So, thanks to everyone, and we will talk to you next month.