

New England Energy Alliance **Energy Roundtable**

Perspectives on the Impact of Zero Electricity Demand Growth Strategies on Regional Energy Infrastructure Development

Moderated by Nora Brownell, former Commissioner
Federal Energy Regulatory Commission

David Manning, National Grid
Seth Kaplan, Conservation Law Foundation
Scott W. Neiman, CRA International
Robert Rio, Associated Industries of Massachusetts

With commentary from Paul Hibbard, Chair
Massachusetts Department of Public Utilities

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New England Energy Alliance

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The New England Energy Alliance sponsored an energy roundtable on November 8, 2007 to discuss Massachusetts Governor Patrick's goal (announced in June 2007) to meet all growth in electricity demand through increased efficiency investment and demand reduction programs rather than from new generating facilities. On the day of the roundtable, energy legislation was filed by Massachusetts House Speaker DiMasi – with the support of the Governor – calling for a 10% reduction in energy (and electricity) usage by 2017 (and a reduction in greenhouse gas emissions by 20 percent by 2020, among other requirements).

A thought-provoking discussion was moderated by Nora Brownell, former Commissioner of the Federal Energy Regulatory Commission (FERC) with a diverse group of stakeholders including:

- David Manning, Executive Vice President of National Grid;
- Seth Kaplan, Senior Attorney and Director, Conservation Law Foundation;
- Scott Niemann, Principal, CRA International; and
- Robert Rio, Senior Vice President, Associated Industries of Massachusetts.

The discussion focused on several fundamental issues involving Governor Patrick's proposed goal: Is the electricity efficiency goal achievable? How can it be achieved? What timeframe would be required? And how would it be implemented? In addition, the impact on regional electricity infrastructure – specifically transmission and generation – was considered.

Insights from a regulatory standpoint were offered by invited guest Paul Hibbard, Chairman of the Massachusetts Department of Public Utilities.

This brief report contains key highlights of the back and forth discussion. The New England Energy Alliance was formed in 2005 to encourage discussion of regional energy needs and to advocate for needed infrastructure. The Alliance members and participants hope you find the discussion informative as Massachusetts and the region develop initiatives to meet future electricity demand while balancing economic and environmental goals.

For further information on the Alliance, please visit our website at www.newenglandenergyalliance.org

Sincerely,

Carl Gustin
President

Paul G. Afonso
Executive Director

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I. Introduction

Massachusetts Governor Patrick directed the Massachusetts Secretary of Energy and Environmental Affairs to develop a plan to achieve an aggressive goal to meet all of the state's growth in electricity demand by energy efficiency, rather than through power generation.

The administration calculated that using energy efficiency to meet all electricity demand growth would save consumers \$65 million to \$87 million due to lower wholesale supply costs. Those customers who install products that use less electricity would reap savings of \$1.2 billion over the life of those products. In addition, expanding the market for energy efficiency services and products would create 3,500 new jobs in sales and installation of energy efficiency measures.¹

In order to help achieve this goal, the administration launched an investigation into alternative rate and recovery structures that would reduce the existing disincentives for electric and gas utilities to promote energy efficiency and other demand resources (DPU-07-50). The rate redesign involves “decoupling” utility profits from the volume of electricity sold.²

The administration also proposed using the proceeds from the sale of carbon dioxide emission allowances allocated to the state from its participation in the Regional Greenhouse Gas Initiative (RGGI) to be reinvested in energy efficiency measures to reduce electricity demand.³

The New England Energy Alliance convened a roundtable discussion featuring a diverse group of stakeholders to discuss whether and how the goal can be achieved and what the long-term implications on electricity infrastructure would be. The intent was neither to endorse nor oppose the policies, but to raise and vet the most significant issues surrounding implementation.

The roundtable discussion was held over a two-hour period on November 8th – the same day Massachusetts legislative leadership – with the support of the Governor – filed energy legislation titled the “Green Communities Act of 2007”, requiring total energy consumption in Massachusetts be reduced by 10 percent by 2017 . Also included were provisions to: promote off-grid generation, reduce greenhouse gas emissions by 20 percent by 2020 and require the state to rely on renewable resources for 20 percent of the state's electricity consumption by 2020.⁴

¹ “Governor Patrick, Legislative Leaders Set Aggressive Energy Efficiency Goal”, Press Release, Commonwealth of Massachusetts, Executive Department, June 25, 2007

²Under existing ratemaking practices, utilities have a disincentive to increase energy efficiency in order to generate the revenues needed to offset increasing operating expenses and fund needed system reliability and capital expansion projects. By decoupling profits from sales, utilities will be able to facilitate a dramatic ramp up in energy efficiency. Currently, utility energy efficiency efforts are capped at about \$125 million per year – the mandatory legislatively imposed charge collected from ratepayers for programs administered by local distribution companies.

³ RGGI is a regional effort to achieve reductions in carbon dioxide (CO₂) emissions from power plants in ten Northeast and Mid-Atlantic states. The reductions are achieved via a market-based mechanism referred to as “cap and trade” in which total emissions from affected facilities are capped at an initial level and the cap is reduced over time. The states issue “allowances” in an amount equal to the total capped emissions and allocate those allowances to individual states in proportion to their emissions. Facilities can either make reductions themselves or purchase allowances from an allowance market system. The Governor and state leadership support using the money from the allowances for energy efficiency programs and renewable energy development.

⁴ The Green Communities Act of 2007, Massachusetts House Bill No. 3965

II. Participants

A diverse mix of participants representing environmental, business, regulatory and energy industry interests provided thoughtful and constructive insight to assist Alliance members, policymakers, legislators, and others gain a better understanding of the issues involved.



Nora Brownell, Moderator: Former Commissioner of the Federal Energy Regulatory Commission and member of the Pennsylvania Public Utility Commission, and past president of the National Association of Regulatory Utility Commissioners.



David Manning: Executive Vice President of National Grid, former Executive Vice President of Corporate Affairs and Chief Environmental Officer of KeySpan Energy and former president of the Canadian Association of Petroleum Producers.



Seth Kaplan: Senior Attorney and Director of Conservation Law Foundation's (CLF) Clean Energy & Climate Change Program, focusing on fostering renewable energy, working for climate protection and reducing the environmental impact of fossil fuel power plants.



Scott Niemann, PhD: Principal, CRA International, an economist with extensive experience in the design, policy and analysis of energy markets and member of CRA's Energy and Environment Practice



Robert Rio: Senior Vice President for Government Affairs for the Associated Industries of Massachusetts, the state's largest nonprofit, nonpartisan association of Massachusetts' employers with more than 7,000 members.



Paul Hibbard: Chairman of the Massachusetts Department of Public Utilities (guest commentator).

III. Summary

There was consensus that the electricity efficiency goals established by Governor Patrick and contained in the Green Communities Act of 2007 could be achieved with current technologies within the next three to five years if: utility revenue decoupling mechanisms are adopted; and the revenue from RGGI allowances is applied to expand efficiency programs.

Over the longer-term, however, concerns were raised about the magnitude and sustainability of the savings – and impacts on electricity reliability and the region’s economic competitiveness:

- **Magnitude of Electricity Savings** – There is significant uncertainty about achievable savings. While electricity consumption in the region is down, peak demand continues to rise – at about 5 percent annually in some areas. If this strategy is implemented to the exclusion of building new infrastructure (generation and transmission) and it doesn’t reap the savings expected, the region will be in a catch-up mode as it can take years to build new infrastructure.
- **Sustainability of Savings** – Many commercial and industrial companies have already spent considerable amounts of resources on efficiency – only to see electricity bills continue to increase. It may be difficult to “incentivize” them to do more efficiency if there are no “perceived” savings. Concerns about how the Commonwealth plans to grow the economy without increasing electricity consumption were also expressed.
- **Economic Impacts** – Attaining the efficiency goals will require additional ratepayer funding. A recent AIM survey shows that electricity costs are a key factor in business decision-making. In 2007 at least six large manufacturing companies have transferred production to other states due to high electricity costs. Increasing electricity rates to help pay for efficiency and environmental programs puts the state at a competitive disadvantage because most other states do not have these programs and Massachusetts already has some of the highest electricity rates in the country.

Attaining energy efficiency goals will be needed to meet environmental goals required by RGGI and contained in the Green Communities Act of 2007. Significant new infrastructure will also be needed. Even with extremely optimistic assumptions about efficiency, it was estimated that the region will need thousands of megawatts of renewable generation including wind, solar and emerging ocean energy technologies.

New transmission will also be required to connect these renewable resources in Northern New England and in offshore locations to demand centers where electricity is needed most. Streamlined siting policies to ensure projects are built in a timely manner will also be needed.

Attaining the goals will be a difficult challenge. Going forward, the Administration should develop a roadmap to include: specifically how the goals will be attained, key milestones, streamlined infrastructure development policies, decoupling methods and metrics to ensure accountability. Regional coordination will also be required. The Massachusetts tradition of stakeholder collaboration will be important to its success.

IV. Roundtable Discussion

Participant Perspectives

The discussion among the panelists provided insight on how Massachusetts will attain energy efficiency and environmental goals. The following is a synthesis of the dialog moderated by former FERC Commissioner Nora Brownell.

Nora Brownell: Energy policy in the region seems to focus on energy efficiency and renewable resources, potentially at the expense of new, more traditional energy supply infrastructure. Are the energy efficiency goals set by Massachusetts Governor Patrick – and contained in the Massachusetts Energy Legislation – reasonable and sustainable?

Background: In 1998, the Massachusetts Restructuring Act established funding (extended through 2012) for electricity energy efficiency programs through a mandatory ratepayer charge for programs administered and implemented by local distribution companies. Since then to date, about \$1.3 billion has been spent on efficiency programs. Currently, about one third of annual electricity demand growth is met by improvements in energy efficiency. Earlier in 2007, Governor Patrick announced a plan to meet all growth in electricity demand by energy efficiency within three years (“zero growth strategy”). The Massachusetts Energy Bill filed on November 8, 2007 requires a 10% reduction in electricity demand by 2017. These goals would expand current efficiency efforts significantly.

Scott Niemann: The zero demand growth policy is very ambitious. It will bring energy efficiency and conservation up to a new level. We've seen in other markets throughout the country — notably in the PJM market – that when economic incentives for efficiency and demand response are introduced, more initiatives are proposed than anticipated.

Creating the right economic incentives to become more energy efficient will be the real key to success. What I would add is that as an economist, we need to make sure that the policy not only results in energy efficiency, but economic efficiency.

Is energy efficiency the best choice? Is it the only choice? It's certainly not the only choice and we need to weigh it against other policy goals and other ways to implement the end goals of climate change and reduction in fossil fuel use.

Seth Kaplan: The term "zero" is very negative. I would prefer to say "meeting load growth through energy efficiency and clean and demand side resources".

CLF presented an analysis to the Maine Governor's Wind Power Taskforce that shows there is no way of meeting any of the emissions goals that scientists tell us need to be made without reducing electric demand. That's only one part of a very complicated puzzle. We need an array of options.

That same analysis showed that we will need thousands of megawatts of wind generation in New

England to meet our climate goals -- even with making extremely optimistic assumptions about efficiency and fuel switching to low- or zero- carbon fuels. We also need a lot of solar and ocean energy.

It will be a real challenge. The Massachusetts tradition of stakeholder collaboration on these issues will be very important.

David Manning: There is public and bipartisan support for energy efficiency – for reducing reliance on fossil fuels and improving the environment. The pressure to move forward is insurmountable.

The goal going forward will be “how does Massachusetts become more competitive -- or at least maintain its current level of competitiveness in attaining the goals”. It's a bipartisan and public concern and there is a huge amount of pressure on the industry and policy leaders and regulators to get it right. And the hope is that we can preserve the competitive position of the northeast and Massachusetts going forward.

Robert Rio: While experiments are good, we need to keep an eye on the cost of electricity. AIM just released the results of an energy survey of business located in the state. Almost fifty percent of respondents said that electricity costs will drive decisions about future investments in Massachusetts.

So, we really don't have time to do experiments if we're not sure they're going to reduce the cost of electricity. A tenth of a cent or a quarter of a cent increase for some of our members can be the difference between remaining viable or leaving the state.

As we debate programs that may be good for the environment, we need to remember that other states are not subject to those same programs. We need to recognize that Massachusetts will lose people, industries and commercial development if electricity costs continue to rise.

This year, we've seen about six fairly large companies leave Massachusetts because of high electricity costs. These are not companies that went bankrupt. These are companies that decided to transfer production to other states. That should be a cause for concern because companies in Massachusetts already pay thirty to forty percent more for electricity than other states.

Nora Brownell: Electricity is the “fuel of choice” in our high-tech economy. Energy efficiency to date has helped mitigate electricity demand and consumption, but has not stopped its growth. How do we fund and implement more energy efficiency without disrupting the economy?

Background: Massachusetts currently ranks second in the nation in terms of electricity efficiency spending. But this ranking does not convey the true magnitude of the expenditure and the potential impact it has on the Commonwealth's competitive position against other states with high-tech economies. For example, Massachusetts spends at least 40 times more per capita on electricity efficiency than does North Carolina and more than double what California spends. This spending has helped reduce electricity demand by about one-third in comparison to what it

might otherwise have been. But electricity demand continues to increase due to population growth, larger homes, increased use of air-conditioning and use of electronics. Meeting all growth in electricity demand with efficiency will require an unprecedented amount of efficiency – a challenge that has never been met in a growing economy.

Seth Kaplan: Quoting one energy company CEO, the three most important things in the energy business right now are climate, climate, and climate. That's what's defining things.

The scale of the paradigm shift we're talking about in terms of climate is enormous. The two ways of predicting economic development in terms of GDP growth have traditionally been determined by “increase in vehicle miles traveled” (how much people drive), and “increases in energy (most recently electricity) consumption”. We need to break those correlations because there is no way we can continue saying, "Increased electricity consumption is not inherently bad," unless we completely and radically change. Unless we make that paradigm shift, given the current mix of generation with substantial fossil generation, increased electricity consumption is a problem in terms of meeting climate goals.

We need to shift to more local resources. Every dollar that we spend on petroleum is equivalent to taking \$.80 to \$.90 out of the local economy. If we spend \$1.00 on energy efficiency or on wind generation, that's money we're keeping local.

The second point is people pay bills not rates. And there are few things that are less instructive about the future cost of energy to folks than rate projections. If you are relying on wind generation, for example, you can be very certain of what its cost will be ten years from now because the costs include only two components: the capital cost and a very small O& M cost – fuel is free. The same can be said for efficiency. There is a stabilizing factor and in some cases, people are often willing to pay a little bit extra now in order to get price certainty later.

Robert Rio: We've been promised that energy efficiency will reduce people's energy bills. We've been implementing energy efficiency programs in Massachusetts for twenty years, spent billions of dollars. It's a huge amount of money that businesses have diverted that could have been spent on capital equipment or manufacturing products.

Our survey shows that over sixty percent of the companies that have implemented energy efficiency improvements have higher electricity bills today. While electricity prices have predominantly increased due to the cost of fuels, it will be difficult to incentivize companies or people to continually do more energy efficiency when their total bills keep going up.

I always hear, "Well, the rates would've gone up more or you would've paid more had you not done energy efficiency," and I guess that's a good rationalization, but I'm not entirely sure economically that's going to continue to hold water. We want to encourage people to do even more energy efficiency.

Continually squeezing businesses to pay for carbon and energy reduction puts the state at a competitive disadvantage because other states have not caught up to where we are and probably will not for many years. It's going to be very difficult to burden businesses in Massachusetts

with higher electricity costs because we're trying to save the world when in fact other states are not and are attracting all kinds of industry and commercial enterprises.

And energy costs permeate practically every part of our economy. For example, members of the Mass Hospital Association are very concerned about high energy costs that are passed through that increase healthcare costs. So we need more than just energy efficiency programs. We should work towards more efficient building codes. When we build a new building, we should build it to the highest energy efficiency codes so that the cost is incorporated into the building cost.

I added up all the costs of the current energy efficiency and renewable programs in Massachusetts. I came up with about \$250 million dollars — about which seventy percent is funded by commercial and industrial electricity ratepayers. If you look at how much revenue is needed to be generated in Massachusetts at a five percent profit margin just to produce the amount that goes to these programs, we're talking several billion dollars. So several billion dollars of economic activity in Massachusetts is needed to fund programs that we're not always sure are working properly.

Seth Kaplan: I've never heard anyone present the real apples to apples comparison of what the bills would have been without efficiency programs. What's really fascinating is that efficiency is the only energy resource that we currently cap. But efficiency is the one resource that we look at where we just look at the costs and don't compare it against the costs of other resources – such as generation.

David Manning: One of the circumstantial advantages of this region is that when the generation choices were made in late 80s and 1990s, the primary choice was to build new combined-cycle natural gas-fired generation which today comprises almost fifty percent of the region's generation. If the real environmental cost of energy is ultimately achieved in his country, then that would be an equalizer, but right now because we have a lot of combined- cycle generation, we have a dependence on fossil fuels. Unless we're going to see new nuclear in this region, which you're not going to see, I don't believe anytime soon, your best opportunity for these efficiency programs is going to be here in this region because you're committed.

It's the high bills that people are struggling with and, of course, the largest single input cost is the fuel. Because we are dependent on fossil energy here and it's not necessarily a negative because a lot of the mechanical choices were the right ones made at the time. You've got newer plants that are burning fossil fuels more efficiently, but they're still burning fossil fuels and we're completely exposed to the world economy on oil. So there's real incentive here to be an incubator for new technology and to back out some of those hydrocarbon sources.

Robert Rio: We had a quote on one energy survey that said, "Over the last three years our electric consumption has been reduced by twenty-seven percent however the total cost for electricity has increased by fourteen percent." I said, "You know, but things would've been worse had you not conserved that twenty-seven percent." His reply was "You know, you're absolutely correct, but when I decide where I'm going to put businesses and where I'm going to expand, I don't use that logic. The logic I use is how much does it cost me to produce my

product and how much is it going to cost me a few years from now. I cannot use the logic of “things would've been worse had we not spent a half a million dollars for efficiency”. We were told that energy efficiency would reduce costs. We haven't seen it.

Nora Brownell: **If efficiency is implemented to the exclusion of building new energy infrastructure, attaining these aggressive efficiency goals, even zero growth, will be critical from a reliability standpoint. What metrics are needed to give consumers assurance that the goals will be met?**

Background: If this strategy is implemented to the exclusion of building new energy infrastructure and it doesn't reap the savings expected, the region will be in a catch-up mode in terms of building new power plants and transmission lines -- as it can take years to build new infrastructure in New England. Also reliability may be impacted as ISO New England – the region's independent system operator – has projected the need for one new power plant every year in order to maintain system reliability.

Scott Niemann: I think we can set some very clear metrics. We can show what the main growth in electricity consumption has been, what's coming from energy efficiency.

It is important to keep in mind that electricity consumption in and of itself isn't a bad thing. It certainly is important to fueling economic growth. Economic growth has relied on electricity consumption throughout our history. It's really a matter of making sure that we're doing things as efficiently as possible, finding ways to reduce consumption where it's not needed and meeting increased demand growth in the most efficient way.

For example, a reduction in consumption in the middle of the night is not necessarily as valuable as in the middle of the day. And if we're talking about building infrastructure, it's really what's happening at the peak that counts. So as this policy is implemented and incentives are put in place, conservation that cuts peak demand needs to be rewarded appropriately.

David Manning: That's a very good point because peak demand is up five percent in New England, but our actual overall consumption is down two percent. The existing infrastructure is going to be challenged by that dynamic. If you manage to increase efficiency and yet still have to facilitate those few moments to meet high peak demand, then we have to find a way to facilitate that. There are a lot of different technologies that can be used to reduce demand.

Seth Kaplan: Utility standby rates particularly in the Western Mass Electric and NSTAR service territories are standing in the way of technology deployment. Companies are hoping that decoupling and other regulatory solutions will move towards an end to the standby rates, or a vast reduction in them, or a re-tweaking of them in order to get technologies deployed.

David Manning: That's why National Grid is supporting the Administration's investigation into alternative rate and recovery structures that would reduce the existing disincentives for electric and gas utilities to promote energy efficiency and other demand resources (DPU -07-50).

Nora Brownell: New England, especially Massachusetts, has a good history of energy technology innovation. What role will new technologies play in attaining efficiency and environmental goals?

Background: In addition to mandating energy efficiency, the Massachusetts Restructuring Act required the establishment of two programs to ensure that the benefits of renewable energy continue to be realized in restructured markets. The Massachusetts Renewable Energy Trust Fund was created to award financial support to renewable energy projects – funded through a consumer charge totaling about \$25 million annually. The second program, Renewable Portfolio Standard requires electricity suppliers to provide customers with increasing levels of electricity generated from renewable sources -- 4% by 2009. Thus far, the development of grid-scale renewable projects has been extremely limited.

Seth Kaplan: Ocean technologies are very much on the horizon. There is an ocean energy research operation in Rockport. Rhode Island as far as I can tell is betting their entire economic development future on ocean-based technologies. If we are going to supply Massachusetts with clean renewable energy, we need to build a lot of it here, offshore and in the rest of New England. And we need to build the transmission infrastructure to make that happen.

Robert Rio: There has been such a difficult permitting process to build a non-gas-fired plant in Massachusetts. There has been a lack of coordination between the DPU (Department of Public Utilities) and DEP (Department of Environmental Protection) which will hopefully change. We have not had a coordinated energy and environmental policy. We hope that will improve with the siting provisions in the new legislation.

David Manning: Hydro Quebec will be the largest generator of wind power in North America by 2015. Why? Because they can site it.

It would be terrific if we could build more renewable generation here, but we've got to have new transmission. If we're going to get to that solution for the environment and for the climate and the economy we're going to have to live with the idea that we can't do it all here.

But if we can't put up a transmission line to renewable generation, then we're not going to attain the environmental goals. If we don't start to address siting and get some greater degree of understanding among people who want to be part of the solution, we're not going to get this ambitious goal met.

Seth Kaplan: I think part of the problem with transmission siting has been its fairly indiscriminate nature in terms of the fact that we don't do analysis of what kind of power we're carrying through it. Right now there is a rising tide of opposition to the National Interest Electricity Corridors because it will be used to import coal-fired power from some of the dirtiest and least efficient plants in the United States onto the East Coast.

It is possible to bring wind generation from northern New Hampshire and Maine and to some degree from Canada down into southern New England. When we have a transmission policy that doesn't discriminate between power imported from a wind farm and power that's being

exported from an inefficient coal plant, then it sours people on building transmission.

Nora Brownell: In summary, is zero electricity demand growth achievable? If so, when is it achievable, and at what cost?

Scott Niemann: Certainly in the short term it's achievable – over the next three to five years. I think there are a lot of demand response and other efficiency programs that can achieve the needed savings – there just haven't been the right economic incentives in the past to make them economic. So, I think that there are a lot of energy savings that can be realized in the short term. In the longer term, however, I think it will be a real challenge to have no load growth, particularly if it's done on a regional as well as a state level.

Seth Kaplan: Zero load growth is achievable. If we're talking about saving gigawatts (reducing consumption) over the course of the year we're already doing it. However, if we're talking about reducing peak demand, we aren't there yet. But I think we can readily address that sometime in the next five years. And how do we do it? I think we do it through the International Energy and Conservation Code in Massachusetts. If we do it right using the RGGI allowance revenue for doubling the energy efficiency efforts in Massachusetts there will be a positive benefit; there won't be a cost.

Robert Rio: I agree with Seth on at least a couple things. AIM did support the RGGI revenue going towards energy efficiency. In terms of zero growth – I think that for a year or so we can achieve it, but I think overall, the long-term goal is going to be difficult. The state will be spending about \$350 million dollars a year, if you add the RGGI money, which we hope will go toward energy efficiency. At the current \$125 million per year spending on energy efficiency we're still getting historical growth rates. So, in my opinion, we can achieve zero load growth for one year, maybe two years. In the longer term, I'm not sure how much it would cost to get to zero.

David Manning: Zero growth is achievable now because the technology exists and, at least in terms of reducing overall electricity consumption, I agree with Seth that we're essentially there now. It is uncertain, however, when we can achieve zero peak electricity demand and at what cost.

Regulatory Perspective

The following are questions posed to invited guest Paul Hibbard, Chairman of the Massachusetts Department of Public Utilities and a brief summary of his responses.

Nora Brownell: From your perspective, Chairman Hibbard, how will Massachusetts achieve the zero growth policy?

Chairman Hibbard: A month or two ago, the Governor was joined by the Senate President and the House Speaker when they announced a goal of zero load growth sometime over the next several years. It wasn't an announcement that was just a lofty ideal based on policy approaches or environmental considerations. There was a recognition that it was an achievable goal in the

best interest of Massachusetts ratepayers.

The legislation filed today goes a long way towards accomplishing this goal. And there are a lot of people in this room that have been part of that legislation development and understand that it will go a long way to getting us there. And that is good for meeting the climate challenge.

And the goals are not going to be accomplished only through efficiency. There are a lot of aggressive goals for development of distributed renewable resources and we need all of these. I want to turn to an issue you keep raising about increasing costs. I think you fully understand that the investment in efficiency is made in a manner that's expected to be cost-effective.

Certainly at the DPU we're not going to approve any investment in efficiency that isn't cost-effective from the standpoint of the rate payers.

And that gets down to what I think is really the focus of your concern and it's been touched upon. It has to do with the fact that on both the gas and electric side, we are completely hostage to the price of natural gas.

Even if we do meet the next seven gigawatts of load growth through efficiency, or through renewables, or through nuclear power, or through any source other than natural gas, ninety percent of the time the price of electricity will still be determined by the price of natural gas.

That's an incredibly important observation I think for all of the policymakers within this region. When you look at the past ten years of rate increases in this state for either electricity or natural gas, you will see a flat line for distribution services.

Everything that's within the state's control in terms of what's being collected from ratepayers has been flat and it's been flat at a level that's less than a quarter of what consumers pay for energy.

Almost three quarters of a consumer's bill has been the actual cost of the commodity which has been determined by the price of natural gas. So I think you're dead wrong that investments in efficiency haven't ultimately led to ratepayer savings.

What you have seen is that those savings have been completely overwhelmed by our inability to control the price of natural gas and our inability to somehow manage the impact of the cost of fuels on our economy. This is why the legislation represents our best opportunity to maintain the competitiveness of our businesses.

We're never going to have electricity rates that you find in Kentucky or Tennessee. That's why we don't have very energy intensive industries. The only tool that we do have is to try to moderate demand – to try to increase efficiency to drive down customer bills.

But also, to try to focus on demand response and on distributed resources in order to reduce and mobilize our consumption at peak because it's during those times when we're actually paying the highest price for the commodity portion. So, the only tool that we have as a state given our lack of resources, our lack of gas storage capability, our being at the end of the pipelines, essentially

being almost powerless to control the cost of the fuel commodity, is to get control over demand. We need to recognize that while efficiency and distributed resource development are our best tools, there is a lot of uncertainty about what the magnitude of the savings ultimately will be and what the success will be in the aggressive development of new technologies to help us meet those goals. And we have to realize that we need to maintain reliability of the electric and gas systems.

We need the infrastructure to support that. We can't assume that we're going to save and distribute our way out of our current needs for electricity and our expected economic growth. So we are in a difficult position where we're a region that is characterized by high population density, fewer and fewer good sites to site major energy infrastructure, small states, but closely interrelated in the energy sector.

And thinking through ways to coordinate the siting of needed infrastructure across the region is always a difficult political challenge, but it's something that I think the region has come a long way in understanding and we should be able to make some progress going forward.

Nora Brownell: Consumer cost savings were promoted as a key benefit of electric industry restructuring. But soon after restructuring, fuel costs skyrocketed and increased electricity costs, so consumers perceived little or no economic benefit. Is there a risk in overstating the cost savings associated with the zero growth policy?

Chairman Hibbard: I wouldn't be willing to suggest there will be cost savings as a result of the initiative and I think that's in fact the mistake we made when we restructured the industry – that is the impression was given that we were going to drive down costs for retail customers.

There have been some customers — larger customers certainly I think have achieved lower costs than they otherwise would have, but in the energy world, I think all of us realize that you can never actually predict what's going to happen with the main drivers of energy costs. The best you can do, whether it be efficiency, or whether it be restructuring, is suggest that we're more likely to have lower costs than we otherwise would if we don't do these things.

Nora Brownell: Massachusetts is part of an integrated regional electricity grid so policies in Massachusetts may impact other states and vice versa. What is being done to coordinate these policies with other New England state commissions?

Chairman Hibbard: On the coordination level, we have regional organizations that meet periodically and discuss issues. The scheme to try to get some sort of agreement using the rhetoric that has been used throughout the region of “producing states” and “consuming states” is an example of how some are pushing towards agreement. But regional coordination is limited to transmission lines. It hasn't been done for gas pipelines or for LNG facilities, which I think are the more important infrastructure challenges we have before us.

But in terms of electrical transmission lines, while it's difficult to site transmission in New England, we've seen an incredible amount of transmission being sited in New England. And it needs to be sited in consideration of where the transmission will be needed going forward.

If there is a large amount of capacity that has been sited and will go into operation in northern New England and in Canada, then it makes sense possibly compared with other alternatives to site transmission to accommodate that. But we're in a difficult decisional point in time because when you look at the ISO queue which has built up a slug of proposals on the order of ten gigawatts since Forward Capacity Market went forward, you would think, given all our concerns and anxiety over natural gas prices and our dependence on natural gas, you would find primarily nuclear, renewable, coal, or other resources being proposed. And you would find them in alternative locations using different technologies.

But while there's a small slug of renewables, proposed generation is still almost entirely natural gas, combined-cycle generation to be located in southern New England.

So I think that represents a very difficult challenge for our region and will force us to confront what is somewhat of a schizophrenia on whether we want to leave markets to provide the optimal efficient solution – but we recognize down the line that's not an appropriate solution if in the end it frustrates all of our other policy goals with regard to fuel diversity or meeting the climate challenge.

So it's a difficult thing that the region is going to grapple with. We're initiating a regional state committee that will be a good forum. And there are individual discussions amongst the different regulators in various states and with the ISO about how to make something like that happen. There is some sensitivity to the cost allocation formulas for recovering transmission costs going forward. It can be overcome, but we need to have a dialog that merges cost allocation issues with policy priorities and the expected future of energy in the region.

Member Questions

The following is a summary of the questions Alliance members in attendance asked the participants at the conclusion of the roundtable discussion.

Will new customer electric rate designs (time-of-use and real-time pricing) play a role in attaining efficiency goals?

Background: With the exception of very large customers and a sampling of smaller customers who use time-of-use-meters, current electric rate structures provide the vast majority of consumers with the same rate for every hour of the day. Yet, electricity prices at the wholesale level vary dramatically hour-to-hour and day-to-day and season-to-season. As a result, during peak demand periods, consumers are encouraged to consume more than they would if they were aware of the real cost to provide the electricity. A closer correlation between retail and wholesale prices would allow consumers more efficient use of generation resources and would encourage less electricity consumption during expensive peak periods. The Massachusetts Division of Energy Resources (DOER) petitioned the Department of Public Utilities to open an investigation into Dynamic pricing – including time-of-day or real-time pricing – rate structures that are more closely aligned with the wholesale price of electricity to encourage consumers to use electricity more efficiently.

David Manning: Decoupling didn't work the first time around ten years ago. Now we're in a situation where we have a decoupling initiative going on in this state and others. I think that's probably going to be a difficult thing to process through, but it's essential. We have to figure it out — you want to make sure that the utilities that have relationships with customers are part of the solution.

Obviously, there's an opportunity for smart metering and even smart grid in the filed legislation. National Grid happens to have a pretty extensive experience network in the UK. I think some combination of technology and rate structure will be needed to make it work.

Seth Kaplan: I'll tell you what nobody in the energy industry wants to hear, which is from the climate point of view the electricity sector is a weak second player in terms of greenhouse gas emissions to the transportation sector.

Which means that any thought that you're going to rely on offsets and credits from other sectors to meet the climate goals for the electricity sector is a dream. Ultimately what we need to do is have an integrated true policy that looks at not just how efficient the buildings are, but where they are located.

And because if you are able to move to more dense, highly efficient housing, then you get a benefit in both sectors, so in the long term that's what it's all about is those really big policies around where we grow, how we develop, how we use energy not only for heating/cooling, but more importantly for transportation and integrating those policies together in a real smart and effective way.

Chairman Hibbard: In terms of rate design, we're very interested in trying to think through how to make it happen in a way that both provides benefits at the demand level, but also doesn't lead to any shifting costs amongst rate payers that would be inequitable. But hopefully working with everyone over the next couple of years we can figure out a way to get there, so that we can really respond to price in the regional market.

Is the region short-changing itself by focusing almost exclusively on efficiency and renewables without a broader discussion on energy infrastructure?

Background: A study prepared by the Analysis Group sponsored by the Alliance in 2005 found that “all potential contributors to reducing demand and increasing energy supply must continue to be considered in parallel and most are likely to be needed to maintain reliability and mitigate gas and electricity price increases in the region.” It also concluded that New England must reinforce its electric generation and transmission infrastructure starting immediately to be able to meet region-wide reliability requirements.”⁵

Robert Rio: When new buzz words come out like "zero growth" we get concerned because we

⁵ “New England Energy Infrastructure – Adequacy Assessment and Policy Review”, Analysis Group, November 2005.

tend to focus all on efficiency and don't think we need the infrastructure improvements. And then by the time we realize it, it's too late, we're behind the curve and then we have to try and catch up. I think that by using these buzz words we are doing ourselves a disservice because we're not looking at the full range of options.

Seth Kaplan: I think there is a consensus around a vision and there is a make-able deal around very specific implementation items. What we should do is come up with a comprehensive plan for implementing the vision. We can't get the Governors to do that. But what we can get the Governors together on is a big vision – and then you can get them together on the ground on very specific projects.

David Manning: At some point you also have to come to grips with the fact that as much as we want a hometown solution, we are going to have to build the most efficient new infrastructure. There is a lot of infrastructure out there that's aging and that we have to address and there is a cost to that, so as long as we continue to drive forward and replace it the right way and through things like distributed generation – only replace what we have to replace, then I think we can get there.

If we are truly serious about global warming, why are we not talking about nuclear energy?

Background: Nuclear energy produces electricity without emitting greenhouse gases into the atmosphere. Five reactors produce more than a third of New England's electricity. A recent study has found that New England cannot meet the region's commitment to reduce emissions without the continued operation of the region's five nuclear power plants.⁶ It found that even with unprecedented construction of renewable generating capacity, the licenses of the region's plants must be renewed to meet the emission limits imposed by the Regional Greenhouse Gas Initiative by the 2019 deadline.

David Manning: It's a very good point and I get asked this on a very frequent basis. I think you're right. I think the advances in terms of the technology have been positive. There is a lot of enthusiasm -- and I think in the Federal Government around risk management -- and there seems to be more of a regional approach to nuclear waste. I don't see how we get there without nuclear. I'm always asked that question and I'm very glad it came up because I get the opportunity to speak quite a bit and it comes up in every opportunity and it never used to.

Seth Kaplan: The nuclear industry doesn't have its act together in terms of having a coherent answer on the nuclear waste issue. There are also different visions of what kind of plants should be built. The Federal government is talking about building smaller, modular plants. But I hear nuclear companies wanting to build plants that look an awful lot like the existing ones. I hear a great deal of controversy within the industry about exactly which waste solution to pursue. Therefore, speaking from an environmental organization, the current version of nuclear power is not an appropriate climate solution. However, we are open to a dialog and that should happen.

⁶ “Reducing CO2 Emissions in New England: The Imperative of Nuclear Power”, Polestar Communications & Strategic Analysis, for the Nuclear Energy Institute.

V. Conclusion

Nora Brownell: Thanks for participating today. This has been a good discussion. It highlighted unanswered questions and the challenges of technology, economics and science, as well as the importance of working together to find solutions such as: Should there be regional goals? How do we get stakeholders fully engaged and working with each other – which often means putting aside narrow agendas to achieve a broader outcome. What kind of measurements would you put in place and how would you measure this going forward? How can we help develop a more honest dialog – a more robust dialog so that we can get to more common ground for New England? I think the challenge is to capture the full benefits of efficiency without ignoring the needs for new facilities.

As stakeholders representing different interests, your participation in findings solutions is critical and on behalf of the New England Energy Alliance, I thank you for your interest and active participation today and for your ongoing involvement in these important issues.