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To: Lynn Browne
From: Carrie Conaway
Date: May 19, 2006
Re: New proposal for increasing New England's electrical generating capacity through forward capacity markets
cc: Robert Tannenwald

In December, you requested that I keep you informed of any important developments in energy policy for New England. A proposal to increase New England's electrical generating capacity through forward capacity markets was recently delivered to FERC for its approval. This memo summarizes the proposal and the arguments for and against it, as well as highlighting some potential impacts on New England.

Summary

On March 6, 2006, 107 of the 115 parties to a four-month-long settlement negotiation agreed to create a forward capacity market for electricity in New England, in order to address persistent concerns about the reliability of the region's electricity system.

Key elements of the forward capacity market proposal include:

- ISO New England will create three-year forecasts of expected regional capacity needs.
- They will administer an annual descending clock auction to secure that forecasted capacity and determine its price.
- New generation bidding into the market has the option to commit that capacity (and thereby lock in its price) for up to five years. Existing generation can bid only in one-year increments.
- All generators would be required to bid into the market under most circumstances, to reduce their ability to exercise market power and drive up the price.
- Generators that commit to providing capacity and then are not available during times of peak demand would face significant financial penalties.
- ISO will determine administratively whether separate auctions are needed for different parts of the region to address the fact that some areas are more capacity-constrained than others.
- For the first time ever in the United States, reductions in demand through energy efficiency and demand response programs, as well as increases in supply from intermittent resources such as wind power, will be considered capacity and will be rewarded equally.

- The first auction will be held in 1Q 2008. In the meantime, generators will receive transition payments to provide an additional incentive to invest in capacity now.
- The settlement requests FERC's approval by June 30.

This proposal enjoys broad support from energy market participants; more than 75 percent of the participants in the region's wholesale electrical markets support the proposal. However, a number of important parties, including the Maine Public Utility Commission and Public Advocate, the Massachusetts and Connecticut Attorneys General, Massachusetts utility NSTAR, and three consumer groups are still opposed to the plan. Those opposing the proposal are primarily concerned about its cost to end consumers, especially during the transition period, and its potential impact on regional and state economies.

Introduction

On March 6, 2006, 107 of the 115 parties to a four-month-long settlement negotiation agreed to create a forward capacity market for electricity in New England. This agreement appears to be the resolution of years of disagreement over how to increase the region's electrical capacity to ensure reliability. The Federal Regulatory Energy Commission (FERC) must sign off on the agreement in order for it to be valid; the parties to the proceeding requested that FERC do so by June 30, 2006. Most observers expect FERC to approve the proposal. However, a number of important parties, including the Maine Public Utility Commission and Public Advocate, the Massachusetts and Connecticut Attorneys General, Massachusetts utility NSTAR, and three consumer groups are still opposed to the plan.

What is the problem this settlement was trying to solve? What are the terms of the agreement? Who supports and opposes it, and why? What are the next steps and the challenges ahead?

What is the problem?

It has been clear for some time that the deregulated electricity market in New England was not providing sufficient incentives for investment in capacity throughout the region. Immediately after deregulation, between 1995 and 1998, 2,600 megawatts of new capacity came online to fulfill demand pent up from the uncertainties of how deregulation would play out. But since then, investment has slowed. As of 2003, only 1,500 megawatts was planned to come online before 2008, and little of it is actually under construction right now. The problems are particularly severe in eastern Massachusetts, southwestern Connecticut, and northwestern Vermont, where strong demand, limited generating capacity, and barriers to importing electricity from elsewhere threaten local service reliability. In some areas, ISO New England (the independent group that monitors the region's wholesale markets) has had to issue "reliability must-run" contracts, paying generators that otherwise would not operate or would operate at reduced levels to produce more electricity, in order to ensure system reliability.

In April 2003, FERC requested that the ISO develop a market-based mechanism to ensure adequate incentives for meeting the region's reliability and future infrastructure needs. On March 1, 2004, the ISO proposed a locational installed capacity market, known as LICAP. Under the proposal, the region would have been divided into five geographical zones. The ISO would have allocated

payments within each zone based on an administratively set formula that reflected the fact that capacity is more valuable when it is more scarce. Thus, capacity prices, and therefore payments, would have decreased as capacity increased. The formula would have helped ensure reliability by paying for the capacity needed to meet both day-to-day requirements and system reliability needs. In addition, the formula would have rewarded all capacity with payments, whether that capacity was pre-existing or built in response to new market needs.

This proposal met with nearly unanimous disapproval from regulators, consumer advocates, attorneys general—indeed, basically everyone in the energy community other than the ISOs, the generators themselves, and the administrative law judge assigned to the proceedings. Their concerns revolved primarily around the cost of the payments to generators. Many argued the price was too high, particularly since there was no requirement that the new capacity actually be online when it was most needed and since it represented a windfall to generators that were already in the market.

As a result, in June 2004 and again in August 2005, FERC delayed implementing LICAP, the latter time simultaneously warning that LICAP would be implemented in October 2006 if no agreement were reached. In October 2005, FERC granted the LICAP opponents' request for settlement procedures to resolve the issue. The proposal presented to FERC on March 6 of this year was the result of those settlement discussions.

What are the terms of the agreement?

In the forward capacity market plan, ISO New England would be responsible for creating three-year forecasts of expected regional capacity needs. They would then administer a descending clock auction to secure that capacity and determine its price. The initial bidding price would be set at two times the cost of new entry. Electrical generators would bid the number of kilowatt-hours they would be willing to supply at that price. If more resources are bid than the amount of capacity needed, the price would be lowered and generators would re-bid until the amount of capacity bid equals the amount needed. These auctions would be held annually, with reconfiguration auctions to be held monthly to adjust for any expected resources that may have been taken offline or any changes in the amount of capacity needed. If the proposal is approved, the first auction would take place in first quarter 2008 to cover the capacity needs anticipated for June 1, 2010 to May 31, 2011.

Other key elements of the proposal:

- When bidding into the auction, generators adding new capacity would have the option to commit that capacity (and thereby lock in its price) for between one and five years. The availability of terms longer than one year is meant to provide greater assurances to financial backers, encouraging investment in new capacity by guaranteeing a rate of return for the first few years of operation. Existing capacity would be required under most circumstances to bid into the auction (facing penalties if they did not) and could bid only in one-year increments. Essentially, new generation will set the auction price, but the price will be the same for *all* capacity, not just new generation.
- Generators will face penalties of at least 5 percent of their yearly payment if they bid into the system and then are not available at times of peak demand (known as “shortage events”). If the shortage event lasts more than five hours, the penalty will increase by 1 percent per hour,

with some limits on the total possible penalty. The idea is to ensure that capacity will be available when it is really needed and to reduce the possibility of generators exploiting their market power to drive up prices during shortage events.

- ISO will determine administratively whether separate auctions are needed for different parts of the region to address the fact that some areas are more capacity-constrained than others.
- For the first time ever in the United States, reductions in demand through energy efficiency and demand response programs, as well as increases in supply from intermittent resources such as wind power, will be considered capacity and will be rewarded equally.
- During the transition into the forward capacity markets, generators will receive fixed payments based on the number of kilowatt-hours of electricity they are producing. These payments will increase from \$3.05 per kilowatt-hour for the December 2006 – May 2007 period up to \$4.10 per kilowatt-hour for June 2009 – May 2010. If these generators also hold “reliability must-run” contracts, payments from those contracts would be subtracted from capacity payments.

Support and opposition

The new forward capacity market enjoys broad support. 107 of the 115 parties to the settlement either signed the proposal or waived their opposition to it. In addition, more than three-quarters of the generators, transmitters, distributors, end users, and alternative resources that participate in New England’s wholesale electrical market approve of the proposal.

A major reason for their support is that the proposal will be significantly less expensive than LICAP, which was certain to go into effect in October if an alternate agreement were not reached. During the transition period, some estimates show the savings relative to LICAP at as much as \$3.8 billion, or a 45-percent reduction. Over the longer term, the savings are more difficult to predict but could be substantial if the market works as expected and provides appropriate incentives to generators to build new capacity. This could be significantly cheaper than the current situation, since it will meet the region’s reliability needs by encouraging entry into the market by newer and more efficient generators rather than requiring older, relative expensive plants to operate on “reliability must-run” contracts.

Proponents of demand-side resource development and environmental protection are also in favor of the proposal, since this represents the first time anywhere in the U.S. that demand-side resources such as energy efficiency and demand response programs will be treated equally in capacity markets with new generation. The Northeast Energy Efficiency Partnership estimates that the region’s entire annual capacity growth needs can be met through demand reduction, so this approach could have a significant positive environmental impact on the region. Intermittent sources of supply, such as wind power, will also be permitted to participate in the auction process.

The forward capacity market proposal, however, has not garnered universal support. Eight parties to the settlement filed formal oppositions to the agreement. These include the Massachusetts and Connecticut Attorneys General, the Maine Public Utility Commission, the Maine Public Advocate, NSTAR, and three consumer coalitions.

A primary concern among these groups was the proposal's cost, particularly during the transition period. Although it indeed is a significant savings over LICAP, forward capacity markets will still increase costs to end consumers. Estimates of the proposal's cost vary. Tony Buxton, an attorney representing the Maine Industrial Energy Consumer Group, argues that during the transition period, industrial and commercial customers will pay an additional 0.5 to 1 cents per kilowatt-hour; residential customers will pay an additional 1 to 3.5 cents per kilowatt-hour (or about \$5 per month on the average household bill). This would yield a \$2-billion-per-year cost increase in New England by the final year of the transition period. (Costs thereafter are unknown because pricing will become more market-based.) Opponents argue that the transition costs are not supported by either market conditions or the cost of service and are not necessary because of the existing reliability must-run contract process.

Representatives from Maine have been particularly vehemently opposed to the transition plan. Their disapproval stems from the fact that Maine has no capacity problems; in fact, it produces more electricity than it needs and exports the excess to other parts of the region. Yet it is being asked to pay for resolving the capacity constraints in other parts of the region. They feel they are being punished unfairly for doing a better job than other states on building competitive electrical generation markets. (The ISO responded to these criticisms by saying that capacity prices only need to differ within the region to the extent that there are *transmission*, not generation, constraints. So long as Maine is able to transmit its excess power to other parts of the region, it can make up the cost of the capacity payments by selling its exports.) Mainers also argue that the cost of providing goods is lower in Maine than the rest of the region, and electricity should be no different.

Maine is joined by other opposition groups in their additional concern about the economic impact of the cost of the new markets on states and the region as a whole. The issue is particularly acute in Maine because it has the lowest per-capita income in the region. Tony Buxton's estimates showed that the total cost of the four years of transition payments in Maine would be \$350 million, for a population of 1.2 million people. Other estimates show that rates could rise in Maine by as much as 10 percent for large consumers. But this is also a broader concern, since the region already has the highest electrical rates in the nation. Some are worried that even higher electrical rates will serve as another detraction for businesses, particularly large industrial firms, seeking to locate in the area.

More generally, opponents also contend that there is no evidence that the current system is not working. They feel that the market-clearing price is high enough to support building peaking capacity, just not baseload capacity, and that the region does not need more baseload capacity so this is a reasonable market result. Further, they feel FERC did not allow ample time to come up with an alternative to LICAP that all could agree to, arguing that "it's better than LICAP" is not a good reason to adopt a proposal. As Joseph Rogers of the Massachusetts Attorney General's Office said at a recent seminar, "the choice between the noose and the firing squad is no choice at all."

Next steps and challenges

When the parties filed the settlement, they requested that FERC approve it by June 30, 2006. Assuming it is approved without changes, ISO New England would then need to develop more detail on the rules for how the transition period will work; how intermittent, energy efficiency, and demand-

response resources will be incorporated into the forward capacity markets; and how the ISO will estimate the region's installed capacity needs in preparation for the auction. The first auction would be held in the first quarter of 2008, to cover the capacity needs for June 1, 2010 through May 31, 2011.

Opponents in Maine have already indicated that if FERC approves the settlement without changes, they intend to file suit to block its adoption. A March 29, 2006, article in *Megawatt Daily* reports, "Maine's dissatisfaction over the plan has become so great that state legislators, with the backing of industrials, are weighing the pros and cons of removing the state from NEPOOL" (the region's bulk electricity market) and aligning itself more closely with the electrical markets in Canada. The main bone of contention appears to be the transition payments, however, since the final market plan is fairly similar to a proposal the Maine Public Utility Commission put forth before the settlement proceedings began. It is likely that if the transition payment issue can be resolved, the forward capacity market plan will gain further support from these parties. The other opposing parties have yet to announce a potential strategy if FERC approves the proposal; it is not yet clear whether they would be able legally to stop its implementation, let alone whether they would choose to do so.

The potential impact of the proposal on the region's energy markets and its economy is still a question mark, as well. Some analysts have pointed out that planning only three years ahead may not allow enough time to build baseload generators fueled by anything other than natural gas, since coal and nuclear plants often take longer than three years to site and build. This could further heighten the region's dependence on natural gas and exacerbate price volatility in both electricity and home heating markets. Others warn that a guaranteed return for no more than five years on new capacity may not be enough incentive to interest investors in generation projects; they may want stable returns for a longer period. If this is the case, then insufficient capacity will be built and the reliability problems of the last decade will continue.

The costs of forward capacity markets are certainly large and could potentially have ripple effects throughout the regional economy. However, doing nothing to improve the situation would also have been costly. From an economic and business development perspective, it's not clear that higher electricity rates are necessarily worse for attracting businesses than the possibility of rolling blackouts and other service interruptions. Indeed, many firms that require extremely reliable electrical service, such as high-tech manufacturing companies, already generate their own electricity and would be largely unaffected by the proposal.

It remains to be seen whether forward capacity markets will be the solution to New England's electrical reliability problem. But the broad support the proposal has garnered throughout the region is a signal that this is likely to be a step forward for New England's energy markets.

I would like to thank Teresa Huie of the Research Library for her valuable assistance in compiling the background materials for this memo.

Appendix: Key dates in the forward capacity market proposal process

April 25, 2003	FERC requests that ISO develop a proposal for a market mechanism to ensure the reliability of the region's electricity system
March 1, 2004	ISO submits a proposal for a locational installed capacity market (LICAP). Protests are filed almost immediately.
June 2, 2004	FERC delays implementing LICAP until January 1, 2006
August 10, 2005	FERC again delays implementing LICAP, this time until October 1, 2006, but simultaneously warns that LICAP will be implemented at that time if the parties cannot come to an alternate agreement
October 21, 2005	FERC grants the LICAP opponents' request for settlement proceedings to resolve the issue. Administrative Law Judge Stephen Brenner is put in charge of the settlement proceedings.
October 2005 – March 2006	115 parties work for four months to develop an alternative proposal to LICAP
March 6, 2006	107 of 115 parties to the negotiations agree to a forward capacity market for New England and submit a proposal to FERC for its approval. 61 signed the settlement agreement; 46 parties neither signed nor opposed ("legally waived all opposition"); 8 parties filed comments opposing the settlement.
April 11, 2006	FERC Administrative Law Judge Richard Brenner issues a report to FERC detailing the negotiation process leading to the agreement
June 30, 2006	Date by which the parties requested that FERC approve the settlement
4Q 2006	ISO will develop rules to determine how intermittent, energy efficiency, and demand-side resources will be included in the new market
4Q 2006	ISO will propose how they will calculate the Installed Capacity Requirement (i.e., the estimated amount of capacity needed), including the demand-side resources listed above
1Q 2008	Date that the first forward capacity auction will take place, to cover capacity needs for June 1, 2010 through May 31, 2011