State of New Jersey
DEPARTMENT OF THE PUBLIC ADVOCATE
DIVISION OF RATE COUNSEL
31 CLINTON STREET, 11TH FL
P. O. BOX 46005
NEWARK, NEW JERSEY 07101

JON S. CORZINE
Governor

RONALD K. CHEN
Public Advocate

STEFANIE A. BRAND, ESQ.
Director

July 25, 2008

Via Electronic Mail and Hand Delivery

Honorable Kristi Izzo
Secretary
New Jersey Board of Public Utilities
Two Gateway Center
Newark, New Jersey 07102
Attention: Office of Policy and Planning
Draft EMP Comments

RE: State of New Jersey Energy Master Plan
Draft Energy Master Plan Comments

Dear Secretary Izzo:

Enclosed for filing please find an original and two copies of the Department of the Public Advocate, Division of Rate Counsel's Draft Energy Master Plan Comments in the above-referenced matter.

Copies of the comments are being provided to all parties by electronic list server.

We are enclosing one additional copy of the materials transmitted. Please stamp and date the copy as "filed" and return it to our courier. Thank you for your consideration and assistance.

Very truly yours,

RONALD K. CHEN
PUBLIC ADVOCATE OF NEW JERSEY

By: *s/ Stefanie A. Brand*
Stefanie A. Brand
Director, Division of Rate Counsel

SAB/lg
Encl.
C: Service List (via electronic list server)

Tel: (973) 648-2690 • Fax: (973) 624-1047 • Fax: (973) 648-2193
http://www.state.nj.us/publicadvocate/utility E-Mail: njratepayer@rpa.state.nj.us

The Department of the Public Advocate
Division of Rate Counsel
Draft Comments on
New Jersey Draft Energy Master Plan

RONALD K. CHEN
PUBLIC ADVOCATE OF NEW JERSEY

STEFANIE A. BRAND
DIRECTOR
Division of Rate Counsel
31 Clinton Street, 11th Floor
P. O. Box 46005
Newark, New Jersey 07101
(973) 648-2690 - Phone
(973) 624-1047 - Fax
http://www.rpa.state.nj.us
njratepayer@rpa.state.nj.us

Dated: July 25, 2008

Table of Contents

1. Executive Summary

The New Jersey Energy Master Plan (EMP) offers a unique opportunity to develop the context and framework for strong energy decision-making in upcoming years. The New Jersey Department of Public Advocate, Division of Rate Counsel ("Rate Counsel") welcomes the opportunity to comment.

Without a sensible energy plan, New Jersey ratepayers will continue to experience high and volatile energy prices that impact the livelihood of residents and businesses within the state. We applaud the direction that the EMP takes to begin the process of reducing New Jersey's reliance on non-renewable fuels. However, the EMP should provide the framework necessary to conduct a meaningful examination of policies and options to address electricity pricing and issues related to natural gas.

Rate Counsel's comments and recommendations on the draft EMP sections are summarized below:

Electricity Prices: Electricity prices in New Jersey are unacceptably and unnecessarily high and volatile. The EMP process and analysis should provide more opportunity to focus on energy prices and policies to stabilize New Jersey electricity prices.

We recommend that the EMP review policy options that focus on how to decrease electricity prices and how to diverge from the disturbing trajectory that New Jersey electricity prices have followed, with its implications for the state's economy as a whole.

Electricity Resource Adequacy: The EMP has not focused adequately upon an overall quantitative assessment of electricity capacity requirements for reliability in the various future scenarios under consideration. This information is critical to provide adequate future planning.

Rate Counsel recommends that a proper "load and resource projection" be conducted as part of the EMP process.

Natural Gas Considerations: New Jersey natural gas demand, supply sufficiency and reliability, as well as pricing, all interrelate with material aspects of the EMP. Based on such considerations, Rate Counsel believes that natural gas should be a more significant part of the EMP framework.

Rate Counsel recommends that the EMP should address natural gas supply availability, reliability, and cost in greater detail. New Jersey residential gas customers rely on natural gas and New Jersey electric customers will likewise benefit from natural gas initiatives.

Advanced Metering and Smart Grid: Rate Counsel recommends that the BPU keep a process open for evaluating smart grid options and that the EMP should continue to investigate smart grid options. Rate Counsel also recommends that the BPU not support pilot smart grid projects without providing opportunity for the interested parties to participate in careful consideration and discussion of the costs and the customer classes to be affected during the pilot design phase. Further, given the uncertainties associated with the costs and benefits of smart grid and particularly AMI, the BPU should not allow utilities to roll out new meters on a mandatory basis, especially for small customers who may have little room to change their usage patterns or may not have sufficient motivation to reduce load.

Energy Efficiency: Achieving a 20% reduction in energy consumption by 2020 through energy efficiency may prove challenging for the state. In order to avoid unnecessary cost burden and make the plan more achievable, the state should set lower savings targets for early years and higher targets for later years. Rate Counsel recommends that the state periodically review and evaluate the achievement of and progress toward of energy savings targets. In addition, The EMP should evaluate energy efficiency targets and policies on a consistent basis across rate classes to ensure that policy goals are met through effective, efficient, and equitable means.

New Jersey has an opportunity to evaluate the numerous successful programs that have been adopted in other locations and to adopt the programs that would work best in the state. Rate Counsel recommends that New Jersey design its efficiency programs based on the recent efficiency potential study by KEMA as well as experience in the state, in neighboring states, and in states that have achieved high levels of savings. New Jersey should review and update appliance standards and building codes for new and renovated buildings periodically (e.g., every 3 years, or as new model standards are enacted).

Rate Counsel supports the use of a per-kilowatt-hours non-passable charge, similar to the societal benefit charge (SBC) that has been in place in the state, to recover the cost of energy efficiency measures.

Demand Reduction: Demand reduction programs have been and are available for New Jersey. Many of these programs do not require advanced metering infrastructure and accrue benefits to ratepayers and to electric capacity within the state. Rate Counsel generally supports demand reduction measures, provided that they are verified, persistent, and shown to be cost-effective. Program design and funding for demand response should be reviewed periodically for cost and effectiveness at producing demand reductions, and to determine whether target demand reductions are either too high or too low.

It is important that the process by which the benefits of demand reduction flow back to customers is clearly defined, and that the path by which these benefits are returned to customers can be easily and directly traced. Rate Counsel strongly advocates that the benefits of direct load control be retained by EDCs for the customers who pay for direct load control, to offset the cost of the program. In addition, the design of the programs should take into account scheduling for BGS (and RPM) auctions.

Ratemaking Issues: The New Jersey Rate Counsel recommends that ratemaking alternatives should be reviewed by the BPU in a generic proceeding. Many policy options exist to conform ratemaking to the new direction called for in the EMP, but those alternatives cannot be adequately evaluated without a formal, comprehensive review.

Rate Counsel argues that pure decoupling is unacceptable, although a "lost revenue adjustment", sometimes referred to as "partial decoupling", may be acceptable under certain circumstances (such as to allow recovery for lost revenues due to verified energy efficiency savings). EDCs should have a strong policy directive as well as the opportunity to earn a positive financial incentive for successful implementation of energy efficiency programs.

Rate Counsel recommends that the CIEP Real Time Pricing class not be expanded to customers with less than 1000 kW in peak demand at this time. Because mid-size consumers may not be able to obtain comparably-priced service in the retail market (either fixed or hourly), mandatory inclusion in the CIEP Class should be limited to those customers for whom it is clearly the best option. Alternately, if fixed pricing is available from third party suppliers, consumers who switched would no longer have a strong incentive to conserve, which could undermine savings as a result of the program. Indicators of program performance, including factors that reduce program benefits such as customers exiting from real-time BGS service, should be monitored and regularly reviewed by the BPU, Rate Counsel, and other interested parties. Finally, Rate Counsel asserts that there should be a detailed analysis of who is in the 500 kw to 1000 kw customer group, what demand reduction and third-party pricing alternatives are open to them, and how price responsive they are in the short and long term. In addition, it should be investigated whether the shift would have undesirable impacts on GHG emissions by shifting load to off-peak periods, and for customers remaining in the CIEP-FP class.

Rate Counsel generally supports the implementation of inverted tariff rates for some residential customers, provided that base usage rates are set at an affordable level and the consumption threshold above which rates increase should be high, to effectively exclude low-income load. Inverted tariff rates should vary by seasonal usage. In addition, tariff design should be determined through an open proceeding in which Rate Counsel and other interested parties can participate. The impact of inverted tariff rates on switching, consumption, GHG emissions, and low income customers should be monitored.

Rate Counsel is concerned that submetering may result in shifting the cost of energy inefficiency from the landlord to the tenant. The ability of tenants to make the changes necessary to achieve a significant savings should be investigated, as well as whether additional measures are needed to facilitate tenant's ability to adopt energy efficiency measures.

Renewables: Goals for the expansion of renewable energies appear to be broadly reasonable but challenging. Rate Counsel recommends that the EMP should provide details on the contracting and procurement of renewable technologies for the state and that these arrangements should be made in a manner that enable the state to retain the longer-term benefits associated with investment in resources that carry no fossil fuel price risk and little or no carbon regulation impact risk.

Nuclear Power: The EMP mentions new nuclear power, but does not adequately address the cost uncertainties of pursuing new nuclear power generation within the state. As such Rate Counsel recommends that any new nuclear power generation under consideration should be adequately analyzed so that ratepayers do not bear the risks and costs associated with nuclear power generation.

***Transmission*:** The prospect of increased transmission in the state may result in the increased import of out-of-state electricity generated from fossil-fueled resources. As such, Rate Counsel recommends that transmission projects that would result in more electric imports into New Jersey should be avoided as stated in the EMP. However, Rate Counsel recommends supporting export transmission upgrades that would have the salutary result of upgrading existing infrastructure for New Jersey consumers

The following sections detail our comments and recommendations in more detail.

2. Introduction

The New Jersey Energy Master Plan (EMP) offers a unique opportunity to develop the context and framework for strong energy decision-making in upcoming years. Rate Counsel welcomes the opportunity to comment.

Without a sensible energy plan, New Jersey ratepayers will continue to experience high and volatile energy prices that impact the livelihood of residents and businesses within the state. We applaud the direction that the EMP takes to begin the process of reducing New Jersey's reliance on non-renewable fuels. However, the EMP should provide the framework necessary to conduct a meaningful examination of policies and options to address electricity pricing and issues related to natural gas.

The following sections detail our comments and recommendations in more detail.

3. Electricity Prices

Electricity prices in New Jersey are unacceptably and unnecessarily high and volatile. Recent price movements have followed natural gas price movements. The EMP process and analysis should focus more on energy prices and the development of policies to stabilize New Jersey electricity prices.

Reasonable electricity prices are crucial to the well being of New Jersey's citizens and businesses. Recent electricity price increases caused by a combination of factors including natural gas price increases and reliance upon short-term markets for generation service (e.g., contracts three years and shorter) have caused troubling increases in prices. Further electricity price increases over the next few years are likely given current market conditions and structures. Policies specifically designed to mitigate these price increases are urgently needed, and any policies and programs put in place to address other goals must be designed with electricity price impacts in mind.

A. Electricity Price Trends

Retail electricity prices in New Jersey have been increasing at alarming rates. For example, the average retail price of electricity to residential customers in New Jersey increased by 39% from 2002 to 2007.[1] For 2008, this price will increase again, this time by 10.7% percent relative to 2007.[2] Current prices in electricity futures markets suggest that the increases will continue after 2008, with annual increases of between 5% to 10% in 2009 and 2010.[3] Whether and to what extent these further increases (post-2008) occur will, of course, depend upon how the markets, and market expectations, change between now and the time of the next Basic Generation Services (BGS) auctions.

The total residential price of electricity consists of charges for generation, transmission and distribution. Prior to 2006, the generation portion had traditionally been approximately 6 cents per kilowatt-hour (kWh), i.e. under traditional bundled rates prior to deregulation and under the first few BGS auctions.[4] During that period, the cost of "generation" service, whether regulated or purchased in the market, amounted to roughly one half of the total retail price that customers would pay. The other half of the

---

[1] Price increase through 2007 is stated in nominal dollar terms (i.e., not adjusted for inflation) and is based on data from the US Energy Information Administration.

[2] Since the residential service is procured on a three-year rolling ladder bases in the annual "Basic Generation Service" (BGS) auctions, the price for 2008 is determined by the February 2008 auction result, combined with the result of the two previous auctions. The delivered BGS price for 2008 will be 1.54 cents/kWh more than it was for 2007. Thus the average residential retail price for 2008 will increase from 14.44 ¢/kWh to about 15.98 ¢/kWh.

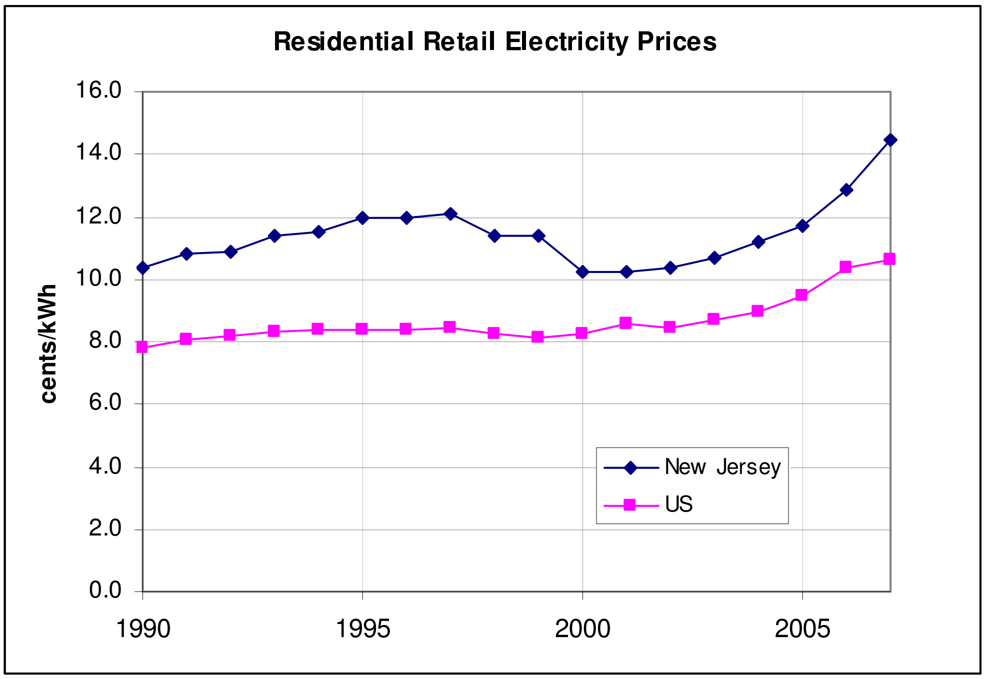
[3] The laddered nature of the BGS auctions spreads out the market changes over several years. Thus the recent rise in wholesale prices will carry over into future residential prices even if wholesale market prices decline from their current high levels.

[4] The 2003, 2004, and 2005 BGS auctions produced "generation" prices in the ballpark of 6 cents/kWh.

total price has been for a combination of transmission, distribution, and restructuring transition charges.

However, the February 2006 BGS auction and subsequent annual BGS auctions have resulted in a generation portion of residential prices at more than 10 cents/kWh. As this has been phased in with the three-year laddered supply mix, the increase amounts to a doubling of the generation price, and an increase of about 50 percent to the total residential electricity price. The result is that residential customers in New Jersey now pay more than 15 cents/kWh for electricity, and further increases are likely. Historical trends in annual residential electricity prices for New Jersey and the United States (US) are shown below in Figure One.

Figure One: Annual Residential Electricity Prices, 1990 to 2007, in New Jersey and the US



The prices for 2007 show a widening gap between the New Jersey and US prices (nominal dollars, from the Department of Energy: Energy Information Administration (EIA) data 1990 to 2007).

B. Relationship Between Wholesale Electricity Prices and Natural Gas Prices

The price of retail generation service, e.g. BGS service, is a function of wholesale market prices. The wholesale market is an alternative to selling into the retail BGS auction; hence, bids into (and resulting prices of) the BGS auctions will reflect bidders' expectations about prices on the wholesale market. In addition, BGS suppliers will anticipate needing to purchase electricity on the wholesale spot market at times in order to fulfill their contractual obligation to supply services sufficient to cover load cycles and peaks, and to cover demand during generation outages. For these reasons, bids in the BGS auction reflect the outlook and price trends of the wholesale market.

Wholesale electricity prices are influenced by many factors, and the causes of the electricity price increases can be difficult to unravel. In New Jersey, there are two major factors responsible for electricity price increases: (1) increases in natural gas prices; and (2) a market structure under which the price of wholesale electricity is set at the “marginal” cost of generation. New Jersey’s electricity resource mix includes coal, oil, gas, and nuclear generation. Natural gas-fired generation represents approximately a third of the State’s net electricity resource mix, and is “on the margin” a large portion of the time.[5] Therefore, it is a key factor in determining the market price for electricity during peak periods[6]. The large increases in natural gas prices in years such as 2005 (e.g., $8 per million British thermal units (MMBtu) in July rising to $14 per MMBtu in October) did have an impact on the price of generation service under a traditional average cost pricing approach, however they are having a much greater impact on the marginal cost pricing approach in PJM.

Figure Two illustrates the relationship between natural gas and wholesale electricity prices in New Jersey by month over the past several years.

---

[5] http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=NJ

[6] Peak periods in PJM include sixteen hours, typically the hours ending 8:00 a.m. through 11:00 p.m., during weekdays excluding North American Electric Reliability Council (NERC) holidays..

Figure Two. Natural Gas and Wholesale Electricity Prices in New Jersey by Month, 2004-2007

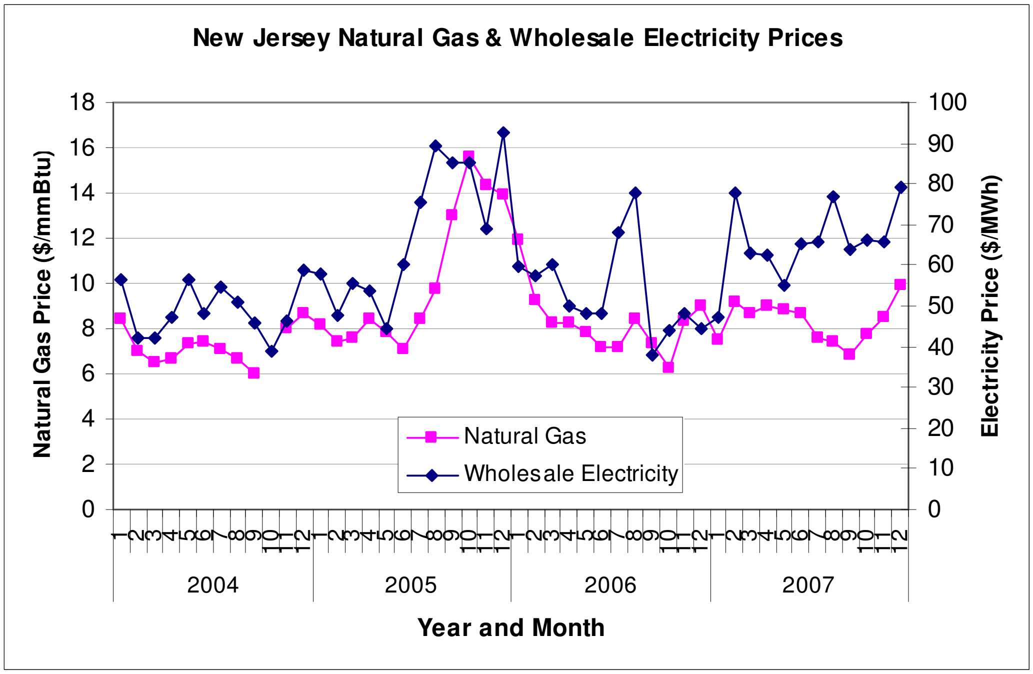
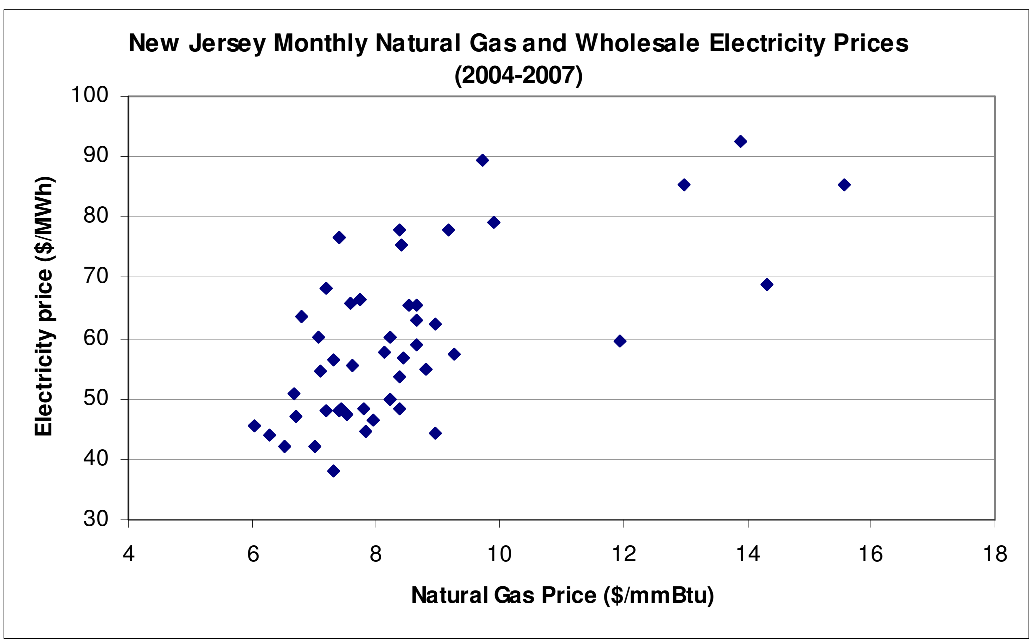


Figure Three illustrates the correlation between natural gas and wholesale electricity prices in New Jersey.

Figure Three: Monthly Natural Gas and Wholesale Electricity Prices in New Jersey, 2004-2007



The wholesale electricity prices for Figures Two and Three are PJM real-time average hourly prices at the "New Jersey hub"[7]. The natural gas prices are prices New Jersey electric generators paid during the period, as reported to the Energy Information Agency (EIA)[8]. While these prices are not perfectly correlated, they do indicate that higher natural gas prices result in higher electricity prices. New Jersey's approach to procuring service for residential consumers puts much of this volatility risk exposure directly on the residential consumers, albeit with a three year phase-in period.

In the context of the overall EMP, natural gas has a material impact on New Jersey's energy costs. As discussed earlier, natural gas prices impact on overall electric costs given their "on the margin" role in determining the market price of electricity. Additionally, natural gas is a vital resource for industrial use, residential heating, and increasingly, electric generation. Additional considerations concerning issues surrounding natural gas are detailed in Section 5.

The electricity price increases that have already occurred and are likely to worsen in New Jersey are a grave concern for the well-being of its citizens and businesses. The State's EMP process offers an opportunity to understand and to address these prices.

C. Basic Generation Service, Long-term Contracts and Portfolio Manager

Basic Generation Service and Long-term Contracts

We recommend that the EMP enable modifications in the BGS auction structure to ensure that consumers benefit when there is an appropriate balance of price stability and lowest reasonable price. Including long-term contracts (e.g., life of unit or fixed terms of 10 years or more) and demand side resources with fixed and reliable pricing in the resource mix or portfolio of resources that an electric distribution company uses to serve its customers is a practical way to achieve that balance of stability and reasonable prices. Long-term or life of unit renewable energy purchases have the potential to enhance price stability, since their costs are not affected by fossil fuel price swings or temporary shortages of generation. Over the longer term, renewable resources also enhance price stability by avoiding consumer exposure to the risk of environmental, regulatory or compliance costs.

---

[7] The New Jersey hub is trading "point" within the PJM interconnection that is specific to New Jersey.

[8] http://tonto.eia.doe.gov/dnav/ng/ng_pri_sum_dcu_SNJ_m.htm

The marketplace for supply and demand provided under long-term contracts exists nationwide, and certainly includes contracting in the mid-Atlantic region. It is evident from, for example, long-term contracts entered into by the Long Island Power Authority (for supply sourced in PJM), or from wind power installations in many different states. We understand that longer-term contracts are often if not always required in order to obtain financing for power plant construction.

Rate Counsel believes it reasonable and prudent that prospective sellers of economically attractive, long-term supply and demand response resources be able to compete to serve a portion of BGS fixed price (FP) demand. Recent experience in neighboring states has shown the sort of massive disruptions that can occur if the price of BGS-FP for all customers is allowed to follow the shorter-term markets too closely, such as with solely one-year contracts. The reliance on one-year rather than three-year contracts for BGS-FP would have led to massive price increases had it been implemented in New Jersey. For BGS it is Rate Counsel's view that a BGS-FP portfolio of long-term contracts that complement the three-year contracts from the BGS-FP auction will provide the appropriate balance of affordability and stability.

Portfolio Manager

Just as the BGS-FP auction has an auction manager overseeing the process of procuring rolling three-year supplies, complementary long-term procurement should be undertaken by an independent entity that functions analogous to that of the auction manager. This Portfolio Manager entity would be charged with ensuring that the best deals available for procurement are analyzed, and that the timing of procurements best ensure low prices and increased price stability for BGS-FP customers. This entity could be a consultant overseeing a request for proposal process, a public power authority, or some other independent agent. The most important attribute of this entity is its knowledge of wholesale market issues, contracting options, and an ability to determine, on a continuing basis, what selectively chosen additions to the mix (i.e., portfolio) of longer-term resources help to best ensure increased price stability, economical supply, and reduced price, environmental and regulatory risk for BGS-FP customers.

A portfolio approach that allows for the solicitation of supply or demand resource under some form of long-term contract would allow prospective purchasing parties or their agents to consider the economics of long-term contracts as part of BGS-FP supply. Such solicitation can, and Rate Counsel believes should be done by the Portfolio Manager prior to and outside the structure of the current BGS-FP short-term supply auctions. If the results of the solicitations do not appear economically attractive to prospective purchasers or their agent, no purchase is required.

D. Energy Master Plan Considerations

While wholesale electricity price trends are, to some extent, driven by regional and even global trends in prices of fuels and construction materials that are beyond one state's control, there are things that the New Jersey Board of "Public Utilities (BPU), the legislature, and New Jersey utilities can do to mitigate the exposure. High and volatile electricity prices can and should be addressed through state energy policy and electric resource procurement. The draft New Jersey EMP as described in the April 2008 documents does not adequately address price, in terms of the underlying assumptions and analysis, or in the set of recommended policies.

In terms of analysis, our understanding is that the EMP modeling will include a reference case and two or more policy (or "alt") cases, and that some sensitivity analyses will be run to test the impacts of some of the key input assumptions. This approach is fine as far as it goes, but should be expanded to include the impacts of different project and procurement arrangements (e.g., utility ownership, long-term contracts, a managed resource portfolio) on the cost of financing and on the ultimate cost of electricity to consumers. In addition, some analysis of exposure to annual price volatility should be a part of the master plan analysis. This would require input assumptions representing the volatility of key price drivers (e.g., fuel prices, air emission prices).

In terms of policies, the EMP should include arrangements that could reduce the cost of financing new supply and demand resources and strategies that could reduce the direct exposure of customers to short-run marginal prices. For example, a procurement approach to BGS that goes beyond the current three-year laddered auction could help reduce exposure to price volatility. Also, the development of renewable resources can be done in a way that leaves customers fully exposed to gas-price-driven marginal electricity prices (the current plan) or can be done in a way that reduces exposure to price volatility (by blending the renewable resources into the resource portfolio).

The analysis for the EMP should include a serious examination of the historical price trends and a detailed effort to untangle the influence of various causes, including fuel prices and market structure. Such analysis could provide an understanding of "where we are" and "how we got here" as well as "where we are headed" that can serve to inform policy choices to create the best possible electricity future for the State.

E. Recommendations

We recommend that the EMP review policy options that focus on how to decrease electricity prices and how to diverge from the disturbing trajectory that New Jersey electricity prices have followed, with its implications for the economy as a whole. Key issues to focus on for addressing consumers' high and volatile electricity bills include:

- Expanding energy efficiency programs to include delivery of cost-effective energy efficiency measures.
- Reforming the BGS auction process to include longer-term resource options to address price stability and reliability concerns.
- Designating a “Portfolio Manager” for electricity default service customers, to procure an appropriate mix of electricity resources, including longer-term contracts and/or development of new generating capacity than can be used to decrease current BGS reliance upon short-term (three years and less) contracts.
- Urging PJM and the FERC to strengthen market monitoring and mitigation at the wholesale level. On the retail level, review and monitoring of the BGS auction should be improved through comprehensive and detailed analysis of the process and results.
- Addressing capacity requirements in a manner that will be less expensive than PJM’s Reliability Pricing Model (RPM) concept.
- Ensuring the important environmental policies such as the Regional Greenhouse Gas Initiative are implemented in a cost-effective manner that will benefit consumers (e.g., with all of the carbon emissions allowances auctioned and the proceeds refunded directly to consumers) .
- Implementing the state’s renewable portfolio standard in a manner that will provide the price and price stability benefits of renewable generating sources to consumers (see Section 10 of these comments).

These ideas have been a consistent theme in Rate Counsel’s written filed comments and verbal comments at EMP meetings, since the fall of 2006.

4. Electricity Resource Adequacy

To date, the EMP process has not focused adequately upon an overall quantitative assessment of electricity capacity requirements for reliability in the various future scenarios under consideration. We expect that there would be little if any incremental growth in annual load under the "EMP policy case", given the state's goals for energy efficiency, demand reduction, and renewable supply. That would mean there would be little or no need for new "conventional" generating capacity in the state through 2020, particularly if a significant portion of the new renewable capacity is located in or near New Jersey.

We believe that load and resource calculations should be featured more prominently in the EMP analysis and documents.[9] Furthermore, an examination of these numbers is essential in order to understand key questions, including the following:

- What types of new capacity are required, and what is the timing of the need for new capacity in (or built to serve) the state by year over the planning period?
- Is it urgent to start construction of that new capacity immediately, or is there a window of time during which we can see how uncertain factors evolve?
- What is the effect of retirement of existing older generating capacity on future resource needs?
- What is the effect of transmission line investments on future resource needs?
- How does the in-state capacity requirement relate to the capacity requirement for PJM as a whole (or to portions of PJM that are smaller than the whole, but larger than New Jersey)?
- How does the physical location of the new renewable generation impact New Jersey capacity requirements?

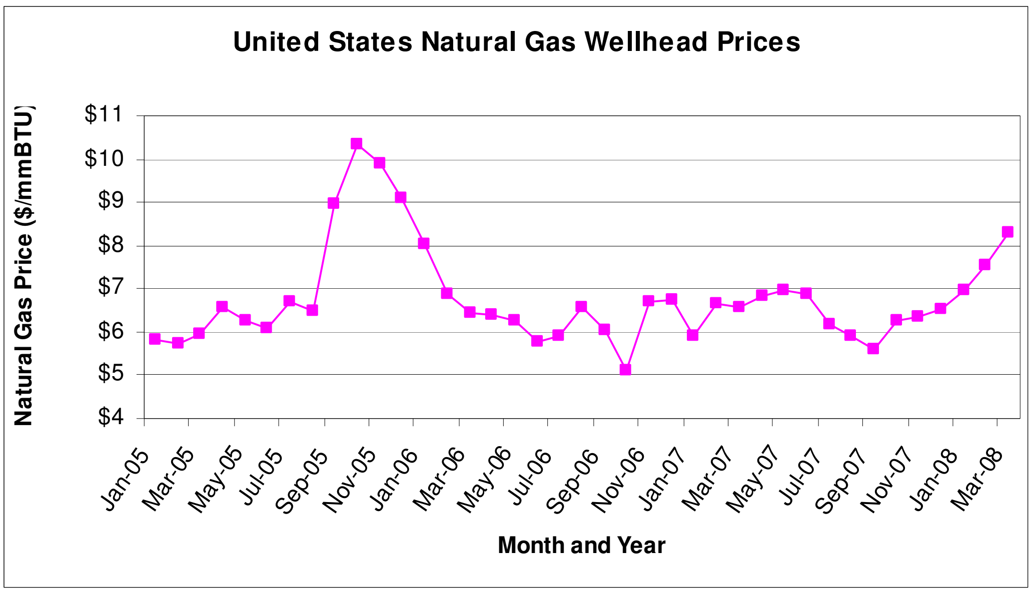
Although the EMP analysis has thus far conducted some calculations of this type, they are buried in the workbooks used to develop the electric system model inputs. Rate Counsel recommends that a proper "load and resource projection" be conducted that would illuminate these issues and tradeoffs.

[9] Electricity resource planning generally begins with a "reference case", consisting of a load forecast, and an assessment of the existing and new capacity to meet the annual peak loads year by year into the future under "business as usual". This sort of assessment of capacity adequacy, often called a "load and resource projection," is a key tool for understanding the timing and magnitude of the need for new resources.

5. Natural Gas Considerations

US natural gas prices have increased dramatically in the last six months (See Figure Four). Natural gas prices in New Jersey, as well as gas demand, supply sufficiency and reliability, all interrelate with material aspects of the EMP. Accordingly, Rate Counsel believes that natural gas should be a more significant part of the EMP framework. The following gas-related issues are suggested for on-going analysis as a corollary investigation in the EMP.

Figure Four: US natural gas prices (wellhead), January 2005 to March 2008



A. Natural Gas Demand

Current and prospective natural gas demands need to be established for both base load and design day requirements. Such basic inputs are complicated because of non-utility gas demand, future gas-fired electric generation, and the effectiveness of demand reductions for both electricity and natural gas. Current gas demand forecasts do not contain definitive estimates for growth in gas-fired electric generation even though such usage accounted for a material portion of gas demand growth in recent years. This becomes even more problematic if price spreads between natural gas and oil remain at current levels. Additionally, design day requirements may be more critical than annual usage because a disproportionate percentage of capacity related costs are incurred to meet peaking requirements.

B. Gas Sufficiency and Reliability

Historically, the availability of gas supply at reasonable prices was assumed. However, with declining domestic production, limited gas importation, and issues concerning the adequacy and safety of gas infrastructure, sufficiency and reliability are increasingly becoming more relevant considerations. Potential limitations on incremental gas production, the high concentration of gas supplies in the southwest and gulf coast regions that have been shown to be subject to interruption, and the potential of terrorist threats to natural gas infrastructure all have the potential to affect gas supply availability.

C. Natural Gas Pricing

In addition to concerns about gas sufficiency, gas pricing has become dependent upon new and, for the most part, external factors. Canadian gas imports are expected to be a less reliable, and perhaps a declining supply source. LNG imports and their supporting terminal infrastructure remain a prospect but not a reality. Even with sufficient LNG terminals, foreign supply remains speculative and subject to world demand and pricing. Natural gas pricing has historically been driven by gas cost at the wellhead, but with escalating oil prices and significant price speculation, it recently has been reaching levels that will materially alter its market valuation and ultimately the associated cost of electricity.

D. Associated Gas Review and Analysis

Based on the diverse gas considerations, several potential gas supply options need further evaluation. Announced LNG importation options need evaluation and state authorization for siting. However, even assuming that such projects go forward, it will be increasingly necessary that secure, guaranteed gas supplies are available for such projects. Imported LNG is being affected by world demand and pricing, and therefore, while LNG terminal capacity would be very beneficial for New Jersey, its reliability of supply and cost must be evaluated further.

Current interstate pipeline capacity is adequate for current requirements, but additional infrastructure is required for new supplies from the Rockies Express project into Clarington, Ohio. Such supply will provide incremental gas and will help to diversify away from sole reliance on Gulf Coast based supply. These supplies, potential western Pennsylvania local production, and increased market area storage appear capable of meeting a significant part of incremental demand.

From a pricing perspective, cost stability and lower interstate capacity costs may be associated with several initiatives. As mentioned, western Pennsylvania production and market area storage could reduce the need for, and costs of, interstate long haul capacity. Additionally, the possible construction of increased LNG storage, separate and apart from LNG terminals, in New Jersey could greatly increase peaking capacity and potentially reduce overall demand costs. Such LNG storage could also increase operational flexibility and supply reliability.

E. Recommendations

In conclusion, the EMP has not focused adequately upon an overall quantitative assessment of natural gas capacity requirements for reliability in the various future scenarios under consideration. This information is critical to provide adequate future planning. The EMP should address natural gas supply availability, reliability, and cost in greater detail. New Jersey residential gas customers rely on natural gas and New Jersey electric customers will likewise benefit from natural gas initiatives. As such, Rate Counsel would encourage on-going evaluation of natural gas related issues.

6. Advanced Metering and Smart Grid

Rate Counsel does not oppose New Jersey utilities investigating smart grid options. However ratepayers should not be required to pay for investments in advanced metering infrastructure or other smart grid options if the benefits of those investments to ratepayers do not demonstrably outweigh their associated costs.

A. Overview

The Draft New Jersey Energy Master Plan (Draft EMP) identifies the need for a clean, competitively priced and reliable energy supply that addresses a series of energy challenges facing the state, including growth in energy demand that is outpacing energy supply, the continually rising price of electricity, and the serious threats of global climate change. Demand reduction is a key element of the New Jersey plan for action for dealing with these challenges. Within the category of demand response, the Draft EMP identifies moving toward the development of a 'smart grid' infrastructure, specifically by supporting pilot programs, as one of the action items. 'Smart grid' technology can access, share, and act on real-time information in support of consumer-initiated energy efficiency and demand response actions or enable automatic actions to reduce energy consumption, if coupled with end-use technologies capable of responding to price signals. (Draft EMP p. 61)

The Draft New Jersey Energy Master Plan Implementation Strategies Companion Document (Strategies Document) suggests some parameters for the design of the recommended pilot programs. For one, pilot designs should specifically address the interrelationship with the Basic Generation Service (BGS) procurement process. Also, utilities should procure needed technology and services through a competitive process as part of any pilot programs. Any proposed tariff designs could potentially include all customer classes, although customer participation in the pilot(s) should be voluntary if there is a change in tariff design. In addition, the pilot design should test a variety of educational materials, control devices, and communication equipment, such as Advanced Metering Infrastructure (AMI). (Strategies Document, p. 23-24)

The Draft EMP acknowledges some of the uncertainties associated with smart grid technologies:

> "While some states are experimenting with this technology, it has not yet been implemented on a broad scale in tandem with demand response programs. "(Draft EMP p. 61)

The Draft EMP also notes that more discussion is needed to determine the costs and benefits of smart grid infrastructure, particularly with respect to the economic feasibility of changing from master meters for multi-family homes to sub-metering or individual metering of each customer's consumption. It is also noted that different technologies are associated with different costs and different benefits. (Draft EMP p. 61) Accordingly, the

Strategies Document does not attempt to estimate potential energy savings or energy production for pilots that have yet to be designed. (p. 23)

B. Program Design and Review

Appropriately, the Strategies Document suggests provisions for the design and monitoring of smart grid pilot projects. It recommends that the process include the opportunity for Rate Counsel, the BPU, and any other appropriate parties to review the performance of the pilot, and to revise or discontinue components of the pilot. (Strategies Document p. 25) The Strategies Document also proposes performance metrics, including but not limited to the following:

- Impact on participants' bills on a monthly and annual basis, if specific customers have a defined role in the pilot(s)
- Impact on participants' energy use and consumption on a monthly and annual basis, if specific customers have a defined role in the pilot(s)
- Number of drop-outs, length of participation, methods to maintain adequate level of volunteers, if specific customers have a defined role in the pilot(s)
- Impact on LMPs in the pilot(s) zone(s) during peak times
- Overall comparison of pilot(s) costs to savings and benefits. (p. 25)

However, the design of pilots is left to the discretion of the utilities. It is noted that

> The state's utilities, in their ordinary course of business, can undertake pilots at any time to improve the reliability of their infrastructure and to increase operational efficiency. The utilities could then pursue cost recovery under prudency reviews in a public process. (Strategies document, p. 25)

The Strategies Document suggests that specific criteria and pilot designs *could* be developed in a collaborative process, organized by the utilities and including interested stakeholders (such as Rate Counsel), with oversight by BPU staff. According to this document, this collaborative design process *could* include formation of a working group to identify parameters for pilot design, develop implementation strategies, select technology and customer educational materials to be tested, and determine how the pilot would be administered. (Draft EMP p. 24) The Draft EMP is also vague about whether stakeholders would be involved during the design phase, stating that

> *The BPU will* work closely with all stakeholders, and *support pilot projects* to evaluate different technologies and different programs, to ensure that the technologies and programs used in each utility's service territory provide cost-effective benefits to customers overall. (Draft EMP p. 61)

Rate Counsel recommends that the BPU not support pilot smart grid projects without providing opportunity for the interested parties to participate in careful consideration and discussion of the costs and the customer classes to be affected during the design phase, *before* the pilot is implemented and *before* costs are incurred.

C. AMI Costs and Benefits

Two New Jersey electricity distribution companies have recently made proposals to invest in one type of smart grid technology mentioned in the Strategies document—AMI (Draft EMP, p. 61). In New Jersey and elsewhere, investments in AMI are typically justified by the savings in utility operating costs expected from AMI, plus the savings to ratepayers from voluntary reductions in electricity use in response to very high prices during high-price hours a few days every summer (critical peak periods or CPP). These reductions in energy use can produce dollar savings to both participants in the program and to electricity consumers in general by enabling a lower wholesale clearing price through reduced demand of electricity during these CPPs. In addition, Greenhouse gases (GHG) and other pollutant emissions reductions are often cited as a benefit of AMI. However, experience to date on AMI suggests that these benefits do not appear to justify the costs of putting the infrastructure in place for residential and smaller use customers.

Savings in utility operating costs

AMI technology may provide reductions in utility operating costs, because it allows the utility to automate various functions that staff now perform manually, including reading customer meters and turning power on and off at the customer meter. However, AMI filings from utilities in New Jersey and other states indicate that the total cost of AMI, measured as the net present value (NPV) of revenue requirements over 15 years, will be greater than the NPV of forecast savings in utility operating costs over the same period. The forecast savings from automating various distribution system operations range from fifty percent to seventy-five percent of the total cost.

Savings to electricity consumers

The potential for ratepayers to achieve savings “enabled” by AMI is fundamentally different and less certain than their potential for savings from energy efficiency. Customers who reduce their annual electricity use through energy efficiency see a corresponding, immediate automatic reduction in their annual supply costs. In contrast, customers who reduce their electricity use in critical peak periods in response to AMI-enabled dynamic pricing will not necessarily see a corresponding, immediate reduction in their annual supply costs. Instead, the amount of savings they will actually achieve is contingent upon three sets of assumptions

- the level and persistence of reduction in peak demand,
- recognition of the reduction in peak demand by both PJM and the capacity market operated by PJM, and
- pass through of the resulting savings in capacity costs by supply service providers.

By sending time-differentiated prices to the customer via the meter and recording the customer's actual hourly usage, AMI technology can also be used to "enable" customers to reduce their electricity use, particularly during high-price hours a few days every summer. Program participants have the potential to achieve savings on their electric bills by responding to these price signals and reducing electricity use. As an additional benefit, reductions in electricity consumption by program participants may reduce the market clearing price of wholesale electricity, benefiting all electricity consumers. However, it is important to note that AMI technology does not, in and of itself, reduce customer electricity use. Instead, each customer must decide to take one or more actions in response to the price signals that are sent via AMI in order to actually reduce his or her hourly usage relative to their reference or baseline usage.

Estimates of savings to customers from AMI-enabled dynamic pricing, a form of time-differentiated pricing, hinge upon three major assumptions:

- the reduction in peak use per participating customer,
- the percentage of customers who will voluntarily participate, and
- the long-term persistence of the reductions per participating customer.

There is considerable uncertainty regarding each of these assumptions. For example, most pilot projects in other jurisdictions have only operated a few years, and therefore experience with these projects does not translate into long-term persistence of participation and reductions per participant.

In addition, opportunities to save in response to high prices during critical peak periods are infrequent, and the economics are not particularly attractive either for those customers who participate or for small customers in general. Critical peak periods typically only occur 8 to 12 days each summer when electricity demand is very high due to weather conditions and last only 4 to 5 hours each time. Thus, the reductions are expected to occur in approximately 50 hours, or 0.6% of the total number of hours within a year.

In the absence of incentive payments to encourage participation, many small customers may decide that the potentially small economic benefits are unlikely to outweigh the effort required to actively participate. For example, one analysis estimates that an average residential customer would reduce his or her electricity use by 16 percent during a CPP event in order to save approximately $1.24.[10] Over the course of a year, assuming similar savings per CPP event and eight CPP events; the annual AMI savings would be $9.92 for that residential customer. Projecting these savings and additional assumptions on a utility program basis, the analysis determined that it would take approximately 15 years for the aggregate savings from AMI-enabled dynamic pricing to

[10] Hornby, R., Salamone, C., Perry, S., White, D., Takahashi, K. *Advanced Metering Infrastructure – Implications for Residential Customers in New Jersey.* Synapse Energy Economics, July 2, 2008

offset the shortfall between the total cost of AMI and the forecast savings in utility operating costs.[11]

Environmental benefits

New Jersey is faced with the challenge of reducing its contribution to global climate change. The majority of the potential reductions in electricity use enabled through AMI would occur in relatively few, peak-consumption hours each year (when emissions of NOx, a precursor to ozone, are high). Investments in AMI will not automatically lead to lower annual emissions of air pollutants associated with annual electric energy use, such as carbon dioxide and sulfur dioxide. Energy efficiency programs are better suited to reducing electricity consumption throughout the day and year.

D. Recommendation

Rate Counsel recommends that the BPU keep a process open for evaluating smart grid options. However, given the uncertainties associated with the costs and benefits of smart grid and particularly AMI, the BPU should not allow utilities to roll out new meters on a mandatory basis, especially for small customers who may have little room to change their usage patterns, even during CPP events, or may not have sufficient motivation to reduce load.

---

[11] The analysis also assumes a 50% participation in the voluntary dynamic pricing mechanism and that participation would continue over a 15 year period.

7. Energy Efficiency

The EMP should evaluate energy efficiency targets and policies on a consistant basis across rate classes to ensure that policy goals are met through effective, efficient, and equitable means. Numerous programs have been adopted in other locations. New Jersey should evaluate and adopt programs that would work best in the state.

A. 20/20 Policy Goal

From our experience in the clean energy proceedings before the Board, Rate Counsel believes that the EMP should re-examine the allocation of energy efficiency goals because it appears to allocate too much responsibility to residential customers. Energy savings goals should be set according to the economically achievable efficiency potential (which will change over time as new efficient technologies become available) and benefit cost ratios of tapping those potentials.

Using annual energy sales data in 2007 for the state of New Jersey obtained from the U.S. Energy Information Administration, we found that achieving the EMP efficiency targets would produce annual, incremental energy savings for residential customers of 2.3% of the sector annual sales for the next two years and 2.8% for the following two periods, while the level of the savings for commercial customers are less than 2% per year and for industrial customers just around 1% per year (See Table One below).

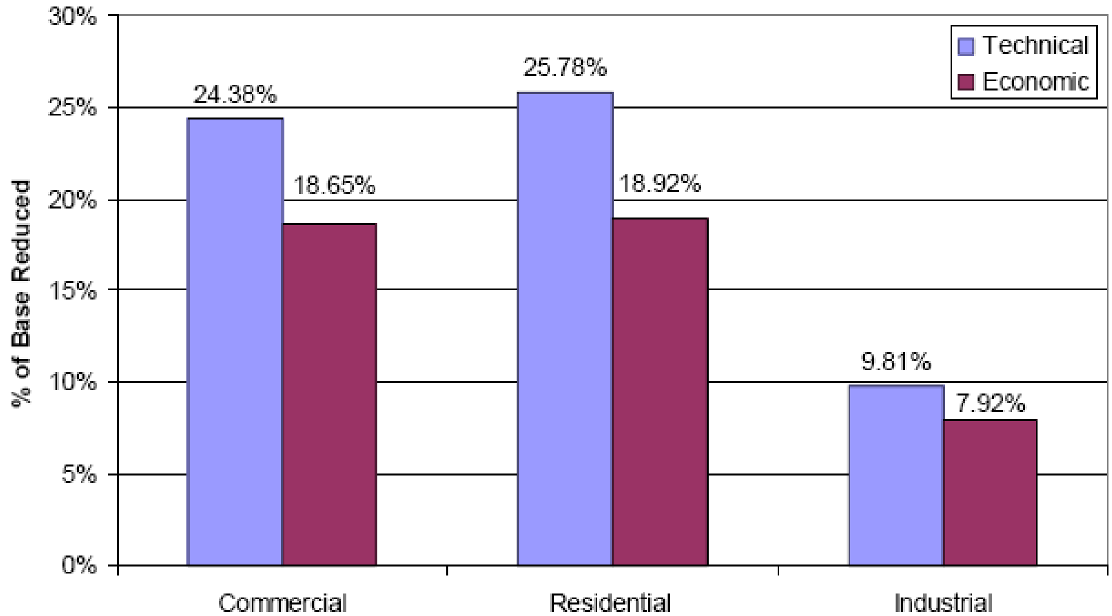
A study conducted by the consultancy KEMA (2004) determined that both residential and commercial sectors have the same levels of energy savings potential in terms of savings as a percent of annual sales, and that the industrial sector has slightly less than half of the potential compared to the other sectors. (See Figure Five below)[12] Furthermore, the study found that benefit cost ratios for efficiency resources are higher for commercial and industrial efficiency measures, which means that investing in such measures would provide greater benefits per dollar invested in the state than a dollar invested in residential measures would. (See Table Two below) Based on KEMA's (2004) findings, this allocation of energy savings among sectors appear overly disproportionate by allocating too much of the energy savings goal to residential consumers. The state should investigate in detail if this allocation represents equal share of responsibility by all sectors and reconsider the allocation.

[12] *New Jersey Energy Efficiency and Distributed Generation Market Assessment: Final Report to Rutgers University Center of Energy, Economic, and Environmental Policy.* KEMA, Inc, Burlington, MA. 2004

Table One: Demand Reduction Energy Savings Goals and Annual Incremental Savings as Percent of Annual Sales by Sector in the New Jersey Energy Master Plan

Period	Energy Savings (GWh)	Savings per Year (GWh)	Savings as % of Annual Sales
Residential Sector			
2009-2010	1,340	670	2.3%
2011-2015	4,128	826	2.8
2016-2020	4,128	826	2.8
Commercial Sector			
2009-2010	1,407	704	1.7%
2011-2015	3,863	773	1.9
2016-2020	3,863	773	1.9
Industrial Sector			
2009-2010	161	81	0.8%
2011-2015	556	111	1.1
2016-2020	556	111	1.1
All Sectors			
2009-2010	2,908	1,454	1.8%
2011-2015	8,547	1,709	2.1
2016-2020	8,547	1,709	2.1
Data from *Modeling Report for the Draft Energy Master Plan* for energy savings target data pages 40 and 41			

Figure Five. Estimated Electricity Savings for New Jersey in 2020 as a Percentage of 2004 Consumption under Two Scenarios: Technical and Economic Energy Efficiency Savings Potential



Source: KEMA 2004. New Jersey Energy Efficiency and Distributed Generation Market Assessment, Figure ES-4. The KEMA study defines Technical energy efficiency savings as all energy efficiency saving measures that are technically possible regardless of cost. Economic energy efficiency savings are defined as those energy saving measures that are cost-effective when compared to supply-side alternatives.

Table Two: Total Resource Cost (TRC) Ratio of Energy Efficiency Investment by Sector in New Jersey: Advanced Efficiency Scenario (2004-2020)

	Program Costs (millions)	Participant Costs (millions)	Total Benefits (millions)	TRC Ratio
Residential	$68.78	$13.30	$159.97	1.95
Commercial and Industrial	51.48	7.97	207.4	3.49
Total	120.27	21.27	367.37	2.60

Table taken from KEMA (2004), Table 2-1

TRC ratio calculated as the Total Benefits divided by the sum of Program and Participant Costs

The allocation of energy savings over time does not appear practical and may place impose targets that are too high during the early period of this policy implementation.

For example, there is no difference in the likely levels of annual incremental energy savings for the second (2011-2015) and third period (2016-2020) of this policy implementation. In addition, the savings target levels for the next two years (2009 and 2010) are not so different from those for later years. This approach is not practical because ramping up to a higher level of energy savings would take some years. In order to avoid unnecessary costs and make the plan more achievable, the state should set lower savings targets for early years and higher targets for later years. The state could set more gradual ramp-up rates to increase energy savings each year to get to 20 percent energy savings by 2020. In addition, a gradual ramp-up would anticipate the development and introduction of more innovative energy savings technologies and appliances. For example, "zero energy" homes and buildings could become technologically and commercially available in the near future and thus provide significant potential to achieve energy savings and carbon dioxide emissions reductions because buildings are responsible for 39% of US energy use, 68% of the electricity consumption and 38% of the total carbon dioxide emissions.[13]

B. Review of the Policy Goal

While energy efficiency is the most cost-effective means to provide energy services to consumers, there are challenges in achieving the 20/20 goal for New Jersey. Yet, there are a number of utilities or efficiency program administrators that have already attained high level of annual energy savings, which could result in about 20% energy reduction in 12 years (as designed in the 20/20 goal) if those levels of annual incremental savings from new programs are maintained. Table Three below shows examples of energy savings by other utilities or states.

Table Three: Annual Incremental Savings as Percentage of Annual Sales Experienced by Other Utilities and States

Jurisdiction or Entity	Annual Savings (Percent)	Year	Source
Interstate Power & Light (MN)	3	2001	IPL DSM Filing 2006, Docket No. 05-581.01
San Diego Gas & Electric (CA)	2.1	2005	SDG&E 2006, Energy Efficiency Programs Annual Summary
Minnesota Power	1.9	2005	Minnesota Department of Commerce 2007, Minnesota's Demand Efficiency Program

[13] U.S. EPA 2004. "Buildings and the Environment: A Statistical Summary," at U.S. Environmental Protection Agency Green Building Workgroup, December 20, 2004, available at http://www.epa.gov/greenbuilding/pubs/gbstats.pdf.

Vermont	1.8	2007	Efficiency Vermont 2008. 2007 Preliminary Results and Savings Estimate Report
Southern California Edison	1.7	2005	SCE 2006, Energy Efficiency Annual Report
Pacific Gas & Electric (CA)	1.5	2005	PG&E 2006. Energy Efficiency Programs Annual Summary
Puget Sound Energy (WA)	1.4	2007	Data obtained from Tom Eckman of NW Power and Conservation Council, May 2008

In order to assure that New Jersey achieves its 20/20 goal, the state should periodically review and evaluate the achievement of and progress towards energy savings goals. At the same time, New Jersey and other states should collaborate to adopt and adapt successful efficiency programs. Finally, if New Jersey finds that achieving the goal is easier than anticipated, it may consider increasing the policy goal in order to further increase the economic and environmental benefits from energy savings measures.

C. Cost Recovery and Incentives

Recovery of Efficiency Program Costs

We support the use of a per-kilowatt-hours non-passable charge, similar to the societal benefit charge (SBC) that has been in place in the state, to recover the cost of energy efficiency measures. An SBC provides a competitively-neutral source of funding from all customers, regardless of which competitive supplier serves each customer. Also, a SBC could be a stable source of revenue for energy efficiency programs if the level of a SBC is set for a long term. The state should review periodically whether the level of a SBC is too high or high enough to meet the energy savings goals each year. As indicated in the Draft New Jersey Energy Master Plan Implementation Strategies, Global Warming Solutions Fund and utility rate recovery could be used to promote efficiency to meet the 20/20 goal. When new utility programs are implemented and rate recovery is used for the implementation, the state should make sure if the new programs are complementary to the OCE/CEP programs, as indicated in its RGGI order.

Incentive for meeting or exceeding explicit reduction targets

As noted above, achieving a 20% reduction in energy consumption by 2020 through energy efficiency may prove challenging for the state. Leading states have implemented incentive mechanisms to provide EDCs with a positive financial incentive to meet, or exceed, explicit reduction targets. (See Table Four below). California has such a mechanism, under which utilities can receive up to 12% of the savings[14] produced by their energy efficiency programs. However, under that mechanism utilities are subject to a financial penalty if they fail to meet a minimum level of reductions. Many of the utilities that have achieved high levels of savings from energy efficiency do not have their revenues decoupled from sales (discussed further in section 9 of these comments).

Table Four. Energy Savings and Existence of Decoupling and Performance Incentives

Utility or Program Administrator	Treatment of Utility Financial Disincentive to Reductions from Energy Efficiency	Performance Incentive	Recent "First Year" Savings as % of Annual Sales in that Year
Efficiency Vermont	No	Yes	1.80% (2007)
Interstate Power & Light (MN)	No	Yes	1.60% (2006)
Puget Sound Energy Inc (WA)	No	No	1.37% (2007)
Massachusetts Electric Co.	Decoupling (2008)	Yes	1.30% (2005)
PacifiCorp (WA)	No	No	1.28% (2007)
Connecticut IOUs	No	Yes	1.11% (2006)
Avista Corp (WA)	No	No	0.99% (2007)
PG&E (CA)	Decoupling	Yes	0.90% (2006)
SDG&E (CA)	Decoupling	Yes	0.90% (2006)
Texas IOUs	No	No	0.90% (2006)
Southern California Edison (CA)	Decoupling	Yes	0.80% (2006)
NYSERDA (NY)	No	No	0.60% (2006)
Data Sources: Efficiency Vermont 2008. 2007 Preliminary Results and Savings Estimate Report, page 24 IPL DSM Filing 2006, Docket Number 05-581.01, Table 1-1. May 6, 2008 email from Tom Eckman of the Northwest Power and Conservation Council; Frontier Associates LLC 2007.			

[14] Savings = avoided costs minus program costs.

Massachusetts Electric Company 2006. 2005 Energy Efficiency Annual Report Revisions, page 2
May 6, 2008 email from Tom Eckman of the Northwest Power and Conservation Council; Frontier Associates LLC 2007.
Connecticut Energy Conservation Management Board 2007. Energy Efficiency Investing in Connecticut's Future: Report of the Energy Conservation Management Board Year 2006 Programs and Operations, Chart B on page 14;
May 6, 2008 email from Tom Eckman of the Northwest Power and Conservation Council; Frontier Associates LLC 2007.
Pacific Gas and Electric 2007. Energy Efficiency Programs Annual Report for 2006 Table 1;
Energy Efficiency Accomplishments of Texas Investor Owned Utilities Calendar Year 2006, Table 3 on page 7;
San Diego Gas & Electric 2007. Energy Efficiency Programs Annual Report: 2006 Results, Table 1
Southern California Edison 2005. 2005 Energy Efficiency Annual Report, Table 1.2
NYSERDA 2008. 2007 New York Energy $martsm Program Evaluation and Status Report, Table 2-14 on page 2-29

D. Program Design

EE programs for Existing Buildings

We recommend that New Jersey design its efficiency programs based on (1) experience in the state; (2) the results of the recent efficiency potential study by KEMA; (3) experience in neighboring states such as New York and Connecticut; and (4) best practices in other states, many of which are documented by ACEEE.[15]

Enhanced building codes

First, building codes should be designed so that the codes are updated periodically (e.g., 3 years) to a higher standard as IECC and ASHRAE produces new standards. Second, the state has to make sure that new building codes are implemented in all new or renovated buildings. Education, training and certification are major components of increasing the level of building code adaptation and improving building energy. It will be necessary to develop enhanced state-mandated training, education, and certification for code officials and builders. Also, education and outreach are important to help consumers and constituents understand the benefits of and cost savings from implementing these programs. Funding should be set aside for training and educating building inspectors. Finally, the state should consider using utility resources to help implement building energy codes. This can include energy audits, review and promotion of building energy codes, tariffs and connection charges that encourage the construction and renovation of buildings that improve energy efficiency.

Appliance standards

Appliances covered by the Appliance Standards Awareness Project (ASAP) are updated annually to incorporate the effects of new state and federal appliance standards. The

[15] Dan York, Marty Kushler and Patti Witte 2008. Compendium of Champions: Chronicling Exemplary Energy Efficiency Programs from Across the U.S., February 2008: ACEEE

state should review and adopt updated ASAP-recommended state-level appliance standards periodically (e.g., every 3 years or as new federal standards are enacted). In this process, the state should work with manufacturers and consider impacts on manufacturers when setting new standards.

Measurement and Verification (M&V) Process for Energy Savings

It appears that New Jersey has developed a comprehensive measurement and verification (M&V) process for energy savings according to the Northeast Energy Efficiency Partnership, Inc. (NEEP).[16] NEEP (2006) found that New Jersey is one of the few states in the Northeast that "formally documented the formulas and standard input assumptions used to calculate energy and demand savings in a technical reference manual or equivalent" and established verification protocols (called Protocols to Measure Resource Savings).[17] Yet there is still uncertainty about how end use appliances operate and how long, and thus states are still investigating end use load profiles. More recently New England states have started to investigate this issue together, because newly established ISO-NE's forward capacity market requires rigorous estimates of capacity reduction from efficiency measures.[18] New Jersey should work with states in New England and learn the process and outcome of their investigation. Further, it would be useful to develop standardized protocols in cooperation with New England states because, as NEEP (2006) identified, there are a lot of inconsistencies in M&V process among states, which made it difficult to compare savings by states.

E. Recommendations

Achieving a 20% reduction in energy consumption by 2020 through energy efficiency may prove challenging for the state. In order to avoid unnecessary cost burden and make the plan more achievable, the state should set lower savings targets for early years and higher targets for later years. Rate Counsel recommends that the state periodically review and evaluate the achievement of and progress toward of energy savings targets. In addition, the EMP should evaluate energy efficiency targets and policies on a consistent basis across rate classes to ensure that policy goals are met through effective, efficient, and equitable means.

New Jersey has an opportunity to evaluate the numerous successful programs that have been adopted in other locations and to adopt the programs that would work best in the state. Rate Counsel recommends that New Jersey design its efficiency programs based

[16] NEEP 2006. The Need for and Approaches to Developing Common Protocols to Measure, Verify and Report Energy Efficiency Savings in the Northeast, January 2006

[17] NEEP 2006, page 17.

[18] GDS Associates Inc. 2007. Measure Life Report Residential and Commercial/Industrial Lighting and HVAC Measures Prepared for The New England State Program Working Group (SPWG) For use as an Energy Efficiency Measures/Programs Reference Document for the ISO Forward Capacity Market (FCM)

on the recent efficiency potential study by KEMA as well as experience in the state, in neighboring states, and in states that have achieved high levels of savings. New Jersey should review and update appliance standards and building codes for new and renovated buildings periodically (e.g., every 3 years, or as new model standards are enacted).

Rate Counsel supports the use of a per-kilowatt-hours non-passable charge, similar to the societal benefit charge (SBC) that has been in place in the state, to recover the cost of energy efficiency measures.

8. Demand Reduction

Demand reduction programs have been and are available for New Jersey. Many of these programs do not require advanced metering infrastructure and accrue benefits to rate-payers and to electric capacity within the state. Rate Counsel strongly supports the adoption of cost-effective peak demand reduction programs that are verified and persistent.

A. Overview of Demand Reduction in the New Jersey Energy Master Plan

The Draft New Jersey Energy Master Plan (Draft EMP) emphasizes significant challenges relating to electricity that face the state:

- The reliability of the state's supply of electricity is at risk.
- The price of electricity is high, and rising.
- The generation of electricity is contributing to global climate change. (p. 25)

Electric system reliability and wholesale market prices are exacerbated by growth in New Jersey's peak demand, which PJM projects will grow by 1.75% annually through 2018, over two times the rate at which supply has grown in recent years. (p. 31) The Draft EMP appropriately identifies reduction in peak demand for electricity as a key element of its plan for action for the state, noting that reducing peak demand is dramatically more cost-effective than increasing the system's capacity to generate, transmit, and distribute electricity to keep up with demand. (p. 29)

The Draft EMP sets forth a goal of reducing peak demand for electricity by 5,700 MW by 2020, by instituting 2,200 MW of peak demand reduction measures and another 3,500 MW of energy efficiency and cogeneration. It is unclear how (or whether) 2,200 MW of demand reduction by 2020 was determined to be a reasonable, attainable goal for demand response programs. The basis of this goal should be clearly explained in the EMP.

The following demand reduction action items are highlighted for "effectively" reducing peak demand by 750 MW by 2011 and a total of 2,200 MW by 2020. (Draft EMP, p. 58-62)

- Expand real-time pricing for commercial and industrial customers with a peak demand of at most 600 kW or greater by 2010 and at most 500 kW or greater by 2012. (See section 9 of these comments for a discussion of ratemaking implications of this action item.)
- Expand incentives for participation in regional demand response programs (broken down into Demand Response Programs and Load Management Program for Large Commercial and Industrial Customers in the Strategies document).

- Evaluate a strong “inverted tariff” pricing system for residential customers. (See section 9 of these comments for a discussion of ratemaking implications of this action item.)
- Move the State’s electricity grid toward the development of a ‘smart grid’ infrastructure. (See section 6 of these comments for a discussion of the costs and uncertainties associated with this action item.)
- Monitor the results of all demand response initiatives through 2011 and implement the most effective mix of action steps to achieve a total peak demand reduction of 5,700 MW by 2020.

All of these action items are expected to produce benefits for consumers, but costs vary significantly. As noted in section 6 of these comments, smart grid and AMI may come with a heavy price tag for consumers, and their benefits are very uncertain. Other forms of peak demand reduction, such as interruptible load resources, receive monetary benefits—credit from PJM—for the reduction in generation capacity requirements that results from operation of these resources. The benefits of demand reduction resources (discussed below) can be attained without implementing AMI, and most likely at a significantly lower cost to ratepayers.

B. Benefits of Peak Demand Reduction

Drawing on resources that reduce demand can help New Jersey with several of the challenges cited in the Draft EMP, including maintaining the reliability of the electricity system; energy supply not keeping up with the growth in energy demand; rising electricity prices; and to some extent, the need for efforts to reduce the state’s contribution to climate change. Theoretically, demand reduction resources that operate during peak hours can offer numerous and significant benefits to electricity consumers, including:

- *Avoided peak plant capacity* - demand reduction resources can avoid the market price for peaking capacity in the short run, and the capital and operating costs associated with new generating capacity in the long run, creating substantial savings to electricity consumers
- *Reduced bills for participants* – demand response produces a direct benefit to program participants through electric bill reductions and incentive payments, if any
- Other smaller, less certain benefits are also possible as a result of peak demand reduction measures
    - *Avoided Transmission and Distribution (T&D) capacity* - demand reduction resources that are sited on or near a constrained portion of the T&D system can potentially: (1) avoid or delay expensive T&D upgrades, construction, and associated O&M costs, including cost of capital and insurance, and (2) reduce frequency of maintenance, because frequent peak loads at or near design capacity will reduce the life of some types of T&D equipment

- *Avoided energy loss in T&D –* demand reduction resources can reduce losses of energy during transmission and distribution, which are typically higher at peak times, coinciding with the highest marginal energy costs and highest energy prices
- *Operating reserves* - demand response resources such as air conditioning or water heater load control can provide the reserves that are needed to respond in the event of a system outage
- *Wholesale market price effects* - demand reduction resources such as demand response can reduce the demand for electricity or gas during the peak, potentially providing some benefits to BGS-CIEP and other customers on hourly real time prices by reducing the wholesale price of electricity during a small number of hours; implementation of demand reduction resources could reduce the market clearing price with the next BGS fixed price procurement
- *Increased reliability* - integration of demand reduction resources can reduce peak loads across the entire T&D system, thus enhancing reliability

However, it is important to distinguish between peak reduction that is verified and persistent, for example Direct Load Control (DLC), and "voluntary peak reduction" that is not. *Benefits can only be achieved from reductions that are verified, persistent and hence predictable.* Benefits require both:

- recognition of the reduction in peak demand by both PJM and the capacity market operated by PJM, and
- pass through of the resulting savings in capacity costs by supply service providers.

C. Recommendations

Recognizing these benefits, Rate Counsel generally supports demand reduction measures, *provided that they are verified, persistent, and shown to be cost-effective*. Other points that Rate Counsel wishes to emphasize include:

- In general, benefits of demand reduction programs should be verified and verifiable. It is important that the process by which these benefits flow back to customers is clearly defined, and that the path by which these benefits are returned to customers can be easily and directly traced. Currently, the dollar benefits of direct load control resources from PJM markets (the demand response "economic" markets and/or RPM markets) are paid to BGS suppliers, who may or—more likely—may not pass these benefits through to consumers in the form of lower BGS prices. Rate Counsel strongly advocates that the benefits of direct load control be retained by EDCs for the customers who pay for direct load control, to offset the cost of the program.

- Implementation of demand reduction resources will not immediately impact fixed price BGS customers but may reduce the market clearing price with the next BGS procurement. The design of the programs should take into account scheduling for BGS (and RPM) auctions.

Consistent with the Draft EMP Action Item 5, program design and funding for demand response should be reviewed periodically for cost and effectiveness at producing demand reductions, and to determine whether target demand reductions are either too high or too low.

As noted in section 6 of these comments, smart grid and AMI come with a heavy price tag and uncertain benefits for consumers. The benefits of demand reduction resources can be attained without implementing AMI, and most likely at a significantly lower cost to ratepayers. New Jersey should continue to look at smart grid technologies but not allow utilities to roll out new meters on a mandatory basis, especially for small customers.

9. Ratemaking Issues

The New Jersey Rate Counsel recommends that ratemaking alternatives should be reviewed by the BPU in a generic proceeding. Many policy options exist to conform ratemaking to the new direction called for in the EMP, but those alternatives cannot be adequately evaluated without a formal, comprehensive review.

A. Decoupling Gas and Electric Utility Revenues From Annual Sales

On June 12, 2007, the National Association of State Utility Consumer Advocates ("NASUCA") passed resolution 2007-01, the NASUCA Energy Conservation and Decoupling Resolution.[19] In its resolution, NASUCA restated its support for effective energy efficiency programs but opposition to decoupling mechanisms that would guarantee utilities a fixed level of revenues between rate cases without regard to the number of energy units sold and the cause of lost revenue. NASUCA recommended that prior to approving any decoupling measures, the state legislatures and Commissions consider alternative measures to achieve energy efficiency and insure that the utilities have sufficiently demonstrated a commitment to conservation programs in the past. The NASUCA resolution states that:

> If decoupling is allowed by any state commission, NASUCA recommends that the mechanism be structured to (1) prevent over-earning and provide a significant downward adjustment to the utilities' ROE [return on equity] in recognition of the significant reduction in risk associated with the use of a decoupling mechanism, (2) ensure the utility engages in incremental conservation efforts, such as including conservation targets and reduced or withheld recovery should the utility fail to meet those targets, and (3) require utilities to demonstrate that the reduced usage reflected in monthly revenue decoupling adjustments are specifically linked to the utility's promotion of energy efficiency programs. (p. 3)

The RGGI Statute allows for efficiency programs by the utilities. By dampening sales growth, utility-initiated energy efficiency measures will reduce the revenues a utility would otherwise collect through its energy charge. The prospect of under-collections and lower earnings from the energy efficiency programs relative to what they otherwise may collect, may create a financial disincentive for the utilities to pursue energy efficiency. The utilities argue that, to the extent they relied upon those revenues to recover distribution costs that are relatively fixed, the reduction in revenues could cause them to under-collect those fixed costs and thus to have lower earnings.

---

[19] Available at http://www.nasuca.org/Resolutions/Decoupling-2007-01.doc.

Decoupling has been adopted by some states to address the issue of under earning resulting from utility initiated programs. However, it is often overlooked that electric utilities are less prone to these types of under-collections because demand is projected to continue to grow. In addition, reductions in sales may occur for other, unrelated reasons, such as energy efficiency programs initiated by government or private firms, or usage that decreases because of recession, temperature variations or simply because of higher prices of energy in general. As the NASUCA resolution clearly states, the regulators must insure that the reduced usage reflected in monthly revenue decoupling adjustments are specifically linked to the utility's promotion of energy efficiency programs before compensating the utility for "lost revenues".

The first step in addressing any potential disincentive is to identify its exact magnitude and nature. Assuming the disincentive is verified and material, the next step is to choose an approach, or mix of approaches, to reduce or eliminate it. Several approaches are available to eliminate this financial disincentive, including frequent rate cases, decoupling all EDC revenues from annual sales, and adjusting EDC rates for the under-collections caused by utility-initiated energy efficiency. Consistent with the NASUCA resolution, Rate Counsel argues that pure decoupling is unacceptable.

A "lost revenue adjustment", sometimes referred to as "partial decoupling", may be acceptable under certain circumstances, such as to allow recovery for lost revenues due to verified energy efficiency savings resulting from that utility's energy efficiency program. A lost revenue adjustment eliminates only the impact of reductions in kWh sales due to utility efficiency programs on EDC revenues. This is a narrow or targeted approach to removing the financial disincentive.

It is important to note that implementation of one, or a mix, of these approaches will not drive an EDC to pursue all cost-effective energy efficiency. Removing a verified financial disincentive may be necessary to create a better environment to promote energy efficiency to further extent. However, removing a verified financial disincentive is unlikely to be sufficient to drive the EDC to pursue incremental reductions, i.e. incremental to current levels. In addition to removing the disincentive, the EDC should have a strong policy directive, discussed in section 7, as well as the opportunity to earn a positive financial incentive.

Citing its "successful" implementation in New York and California, the Draft EMP appears to endorse decoupling electric distribution company (EDC) revenues from annual sales before investigating whether there is need for an alternate cost recovery approach to account for reduced sales caused by energy efficiency programs. (Draft EMP, p. 53-54) As was noted in Rate Counsel's Comments on the previous Draft Energy Master Plan, the discussion of decoupling on page 54 of the Draft EMP is misleading. The statement giving decoupling credit for a 370% increase of investment in energy efficiency in New York State is not substantiated by reference to study(s) that consider other factors effecting the increase in expenditure on energy efficiency programs. It does not speak to whether energy savings resulted from decoupling; nor does it provide any information about decoupling's affect on rates. Stating that "California and New York have the two lowest per-capita electricity usages in the United

States, and both states have instituted decoupling as a state policy" implies that decoupling is the cause of these states' lower consumption; however, the graph on p. 36 of the document illustrates very high electricity prices for both of these states, which in and of themselves provide an incentive for consumers to reduce consumption on their own. Finally, there should be mention of states that instituted and then abandoned decoupling because it failed to provide results, such as Maine.

B. Real Time Pricing for More CIEP Customers

With real time pricing (RTP), customers pay hourly, market-based electricity prices, typically higher at times of higher power demand. Currently, RTP is mandatory for BGS customers with demands of 1000 kW and higher. The Draft EMP recommends that this pricing structure be expanded to commercial and industrial customers with a peak demand of 600 kW or greater by 2010, and 500 kW or greater by 2012.(Draft EMP p. 58) Rate Counsel has concerns about forcing these mid-sized customers into a rate class in which RTP is the only option. Customers with demands of less than 1000 kW who want and are ready to face RTP already have the option of entering the CIEP class voluntarily. Mandatory inclusion in the CIEP Class should be limited to those customers for whom it is clearly the best option.

Rate Counsel recommends that the CIEP RTP class not be expanded to customers with less than 1000 kW in peak demand at this time. The expansion of the CIEP RTP class would probably make hourly priced service the only option for these mid-sized customers. Fixed price BGS customers are at least somewhat protected from abrupt shifts in the market price of electricity by the rolling, three-year BGS procurement structure. Hourly customers have no such protection from today's high and volatile prices for electricity. Mid-size consumers may not be able to obtain comparably-priced service in the retail market (either fixed or hourly). This could be a hardship on medium-sized businesses and will most likely result in substantial increases in customer dissatisfaction.

If fixed priced products are available to these smaller commercial and industrial customers, requiring that these customers go on real-time pricing may simply push them out of the BGS supply altogether to third party suppliers. Consumers who switched to third party suppliers would no longer have a strong incentive to conserve, which could undermine savings as a result of the program. Indicators of program performance, including factors that reduce program benefits such as customers exiting from real-time BGS service, should be monitored and regularly reviewed by the BPU, Rate Counsel, and other interested parties.

RTP tends to encourage consumers to shift electricity usage to off-peak times. Pricing that moves consumption from peak to off-peak times may or may not decrease GHG emissions, depending on whether the generation avoided during times of reduced consumption has lower emissions than the generation that is dispatched when consumption is increased.

The Draft EMP suggests that expanding CIEP service will increase demand responsiveness. While this is generally true in the short run, it is not known how customers would respond to price signals from RTP for long periods of time (e.g., 10 to 20 years). Moreover, Rate Counsel notes that hourly pricing is not the only, and may not be the best, way to improve demand responsiveness.

Rate Counsel asserts that there should be a detailed analysis of who is in the 500 kw to 1000 kw customer group, what demand reduction and third-party pricing alternatives are open to them, and how price responsive they are in the short and long term. In addition, it should be investigated whether the shift would have undesirable impacts on GHG emissions by shifting load to off-peak periods, and for customers remaining in the CIEP-FP class. The current BGS proceeding, which is considering whether CIEP customers with demands of 750 kw and higher should be moved to RTP pricing, is expected to shed some light on these issues.

C. Inverted Tariffs for Residential Customers

The Draft EMP recommends that the BPU examine an expansion of inverted tariff pricing for residential customers with a specific level of demand, to be determined by the BPU. Depending on the structure of the tariff, benefits of inverted tariff rates can include reduced peak power demand and wholesale electricity prices, reduced electricity system capital and operating costs, improved utilization and performance of the electricity system, and possibly reduced greenhouse gas emissions. In addition, this rate structure would better reflect the actual economic and environmental costs of producing and delivering electricity, thereby providing consumers with information reflecting the impacts of their consumption choices.

Rate Counsel generally supports the implementation of inverted tariff rates for some residential customers, subject to certain provisions. The points below emphasize the importance of the design of inverted tariff rates:

- Tariff design should be determined through an open proceeding in which Rate Counsel and other interested parties can participate.
- Base usage rates must be set at an affordable level.

- The consumption threshold above which rates increase should be high, to effectively exclude low-income load. It should be investigated whether there is the need for complementary measures to protect low-income consumers who do not directly pay for electricity but rather pay indirectly through higher rents in multi-unit buildings. Additional measures to target rental properties may be needed, such as disclosing utility bills for a dwelling at the time of sale or rental, or enacting tenants' rights laws to facilitate adoption of energy efficiency measures.
- Inverted tariff rates should vary by seasonal usage. Tariffs based on a time of day structure should be optional for residential consumers. If in place, inverted tariffs should specifically exclude low-income customers, who generally cannot afford to buy equipment that would facilitate cutting consumption during these times.[20]
- Inverted tariff rates are likely to shift consumption patterns, and therefore tariff design(s) would need to specifically address the interrelationship with the Basic Generation Service (BGS) procurement process.
- The impact of inverted tariff rates on switching, consumption, GHG emissions, and low income customers should be monitored.

D. Submetering for Residential Tenants

The EMP Draft discusses the possibility of expanding submetering to residential customers in New Jersey. It directs the BPU along with Rate Counsel, consumer groups, utilities and the New Jersey Apartment Association to discuss the economic feasibility of changing from master meters for multi-family homes to submetering or individual metering of each customer's consumptions. The emphasis on submetering is driven by the belief that tenants are more likely to conserve energy if they are directly responsible for their electric or natural gas use. However, tenants are often not in the position to make the changes necessary to achieve a significant savings. For example, tenants cannot control the building's boiler. The tenant cannot replace the windows or seal up the cracks in an old urban building. Rate Counsel is concerned that by submetering, the incentive is misplaced and the only result will be to shift the cost of energy inefficiency from the landlord to the tenant.

E. Recommendations

The New Jersey Rate Counsel recommends that ratemaking policies should be reviewed by the BPU in a generic proceeding. Although policy options exist, there is currently not enough clarity to finalize policy choices that would provide the most benefit to New Jersey ratepayers.

---

[20] The Draft EMP is ambiguous about how pricing under inverted tariffs would vary, i.e. seasonally, monthly, or hourly (Time of Use). It states that inverted tariff pricing "would charge electricity consumers a higher rate for exceeding a usage amount, *or for using electricity during a specific time.*" [emphasis added] (p. 60). This should be clarified in the Final EMP.

Rate Counsel argues that pure decoupling is unacceptable, although a "lost revenue adjustment", sometimes referred to as "partial decoupling", may be acceptable under certain circumstances (such as to allow recovery for lost revenues due to verified energy efficiency savings). EDCs should have a strong policy directive as well as the opportunity to earn a positive financial incentive for successful implementation of energy efficiency programs.

Rate Counsel recommends that the CIEP Real Time Pricing class not be expanded to customers with less than 1000 kW in peak demand at this time. Because mid-size consumers may not be able to obtain comparably-priced service in the retail market (either fixed or hourly), mandatory inclusion in the CIEP Class should be limited to those customers for whom it is clearly the best option. Alternately, if fixed pricing is available from third party suppliers, consumers who switched would no longer have a strong incentive to conserve, which could undermine savings as a result of the program. Indicators of program performance, including factors that reduce program benefits such as customers exiting from real-time BGS service, should be monitored and regularly reviewed by the BPU, Rate Counsel, and other interested parties. Finally, Rate Counsel asserts that there should be a detailed analysis of who is in the 500 kw to 1000 kw customer group, what demand reduction and third-party pricing alternatives are open to them, and how price responsive they are in the short and long term. In addition, it should be investigated whether the shift would have undesirable impacts on GHG emissions by shifting load to off-peak periods, and for customers remaining in the CIEP-FP class.

Rate Counsel generally supports the implementation of inverted tariff rates for some residential customers, provided that base usage rates are set at an affordable level and the consumption threshold above which rates increase should be high, to effectively exclude low-income load. Inverted tariff rates should vary by seasonal usage. In addition, tariff design should be determined through an open proceeding in which Rate Counsel and other interested parties can participate. The impact of inverted tariff rates on switching, consumption, GHG emissions, and low income customers should be monitored.

Rate Counsel is concerned that submetering may result in shifting the cost of energy inefficiency from the landlord to the tenant. The ability of tenants to make the changes necessary to achieve a significant savings should be investigated, as well as whether additional measures are needed to facilitate tenant's ability to adopt energy efficiency measures.

10. Renewables

Goals for the expansion of renewable energies appear to be broadly reasonable but challenging. Most importantly, the EMP should provide details on the contracting and procurement of renewable technologies for the state and that these arrangements should be made in a manner that allow the renewable resources to provide the price and risk hedging benefits that they are capable of achieving. Rate Counsel favors a market approach rather than a subsidized systems benefit charge (SBC) for the procurement of renewable energy.

The EMP includes clear quantitative goals for solar, wind, and biomass-based renewable energy. It recognizes the concerns with solar electricity costs, and the need to assess offshore wind resources, given the lower on-shore wind potential in New Jersey. The EMP also characterizes the biomass resource potential. It also appears to properly gauge the potential contribution that these resources can make to reduce fossil fuel consumption.

However, the EMP gives short shrift to the contracting mechanisms and procurement processes that could be used to obtain these resources. In particular, it makes no clear recommendations for how New Jersey can retain the benefits of zero-fossil-fuel-risk resources for consumers rather than suppliers, and does not explicitly address the importance of long-term contracting processes to secure these benefits.

Rate Counsel recommends that the EMP include a section addressing the contracting and procurement mechanisms that are available – in particular outside of the current Basic Generation Services (BGS) procurement structure – to retain the longer-term benefits associated with investment in resources that carry no fossil-fuel price risk and little or no carbon regulation impact risk.

11. Nuclear Power

The EMP mentions new nuclear power, but does not adequately address the cost uncertainties of pursuing new nuclear power generation within the state. As such Rate Counsel recommends that any new nuclear power generation should be adequately analyzed so that ratepayers do not bear the risks and costs associated with nuclear power generation.

While development of new nuclear power offers advantages over fossil-fueled generation in terms of carbon dioxide emissions, nuclear power plants are extremely expensive to build. The construction cost estimates for new nuclear power plants are very uncertain and have increased significantly in recent years. Companies that are planning new nuclear units are currently indicating that the total costs (including escalation and financing costs) will be in the range of $5,500/kW to $8,100/kW or between $6 billion and $9 billion for each 1,100 MW plant.[21] In addition, construction lead times for new nuclear units are quite long, and similarly uncertain. From a financial investment perspective, this sort of project with large and uncertain costs, a long and uncertain lead time, and potential for a single event to cause an extended or permanent outage, is unattractive to investors. The new nuclear power projects being discussed in the United States are typically in places where vertically integrated electric utilities hope to place the risks upon their regulated customers. Utilities have, for example, requested regulatory pre-approvals of costs, provisions to recover "construction-work-in-progress," and exceptions to "used and useful" standards for inclusion of costs in rates.

Rate Counsel recommends that *if* new nuclear construction is pursued in the state, it should be subject to appropriate market tests, and costs and risks should not be shifted to customers.

[21] Schlissel and Biewald, "Nuclear Power Plant Construction Costs," Synapse Energy Economics, July 2008

12. Transmission

The EMP focuses on two aspects of electric power transmission relevant to New Jersey: first, that reliance on more transmission will increase energy imports from more likely coal-fired sources west of the state; and second, that the impact of increased transmission to New York will exacerbate New Jersey capacity shortages. The EMP also indicates that imports would in fact, 'dash hopes' of lower energy prices because of the prospects of federal greenhouse gas regulation and the resulting uncertainty of the cost of coal-based power.

These observations are valid. An additional observation is that even with increased imports, prices in the eastern PJM region are likely to remain tied to natural gas prices rather than coal prices for much of the time, thus minimizing the price benefits often associated with coal-fired power even if greenhouse gas regulation were delayed.

The EMP does not develop any particular detailed transmission recommendations, other than to state that New Jersey should not increase its import capability. In general, the EMP recommendation that reliance on increased imports from transmission "would be irresponsible" is valid; and certainly it is true that the prospect of merchant transmission exports of up to 2,800 MW to New York would have a significant effect on the market price for power in New Jersey and introduce demands for more transmission investment to mitigate reliability concerns. It bears noting that the "merchant" impacts are likely to be "limited" to energy and capacity cost increases, since transmission upgrades to maintain reliability due to the merchant load are generally borne by the merchant.

However, the EMP does overlook an important aspect of transmission's role in an effective energy plan, one that is beneficial to New Jersey. PJM reports in its 2007 Regional Transmission Expansion Plan (RTEP) (February, 2008) that approximately $300 million in local transmission expansion planning has been approved in 2007 and in prior years. This amount excludes approved transmission expansion associated with either increased imports (e.g., the Susquehanna – Roseland 500 kV line into northern New Jersey) or transmission built in support of merchant projects exporting energy to New York. These projects are important local reinforcements and expansions that allow for lower intra-New Jersey congestion and more reliable local transmission service. These projects include transformer additions or upgrades, line upgrades or reinforcements, and capacitor and other reactive support devices. These types of upgrades and reinforcements are required and generally are beneficial. As such, the EMP should support these. It is true, however, that the necessity of these upgrades is lessened by achieving significant peak demand reduction through energy efficiency and demand response resources.

Rate Counsel recommends that transmission projects that would result in more electric imports into New Jersey should be avoided as stated in the EMP. However, Rate Counsel recommends supporting export transmission upgrades that would have the salutary result of upgrading existing infrastructure for New Jersey consumers.