



June 20, 2012

Ms. Jaci Trzaska
Research Project Coordinator
Center for Energy, Economic and Environmental Policy, Rm. 255
The Bloustein School of Planning and Public Policy
Rutgers, the State University of New Jersey
33 Livingston Avenue
New Brunswick, NJ 08901

RE: Request for Comments on the Center for Energy, Economic, and Environmental Policy's Draft Avoided Cost memo of June 5, 2012

Via e-mail

Dear Ms. Trzaska:

New Jersey Natural Gas Company (NJNG or the Company) has reviewed the Center for Energy, Economic, and Environmental Policy's (CEEPP) Draft Avoided Cost memo of June 5, 2012. NJNG has not had the ability to conduct an intensive review of many of the assumptions but would like to share the following thoughts:

Comments specific to draft assumptions

- Since this data is expected to be used for the review of the cost benefit analysis for energy efficiency programs and such analysis often requires projections tied to the estimated life of the equipment, we believe it would be beneficial for the memo to provide forecast data to the year 2033 to properly address the review of equipment that has a 20 year life.
- NJNG notes that previous reports have included tables for the Natural Gas Transportation and Distribution Avoided Costs. As an example, these assumptions were included as Table 12 of the report on the 2009 programs (release in March 2010). We did not see any assumptions for these costs included in the draft that was circulated.

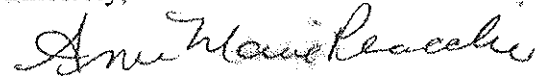
Longer term considerations

While no specific suggestion is being proposed at this time, we believe it is appropriate for New Jersey stakeholders to review what other jurisdictions may be doing in regard to avoided cost forecasts. We understand that some jurisdictions, including Vermont, are beginning to

include values for non-energy benefits in order to account for larger societal benefits from energy efficiency programs.

NJNG appreciates the opportunity to provide comments on these draft assumptions.

Sincerely,



Anne-Marie Peracchio

Director- Conservation and Clean Energy Policy

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Lt. Governor

STEFANIE A. BRAND
Director

June 20, 2012

Via Overnight Delivery and Electronic Mail

Honorable Kristi Izzo, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue, 9th Floor
P.O. Box 350
Trenton, New Jersey 08625-0350

Re: **Comments on CEEEP's Energy Efficiency Cost-Benefit Analysis
Avoided Cost Assumptions (dated June 5, 2012)
Initial Comments of the New Jersey Division of Rate Counsel**

Dear Secretary Izzo:

Enclosed please find an original and ten copies of comments submitted on behalf of the New Jersey Division of Rate Counsel in connection with the above-captioned matter. Copies of the comments are being provided to all parties by electronic mail and hard copies will be provided upon request to our office.

We are enclosing one additional copy of the comments. Please stamp and date the extra copy as "filed" and return it in our self-addressed stamped envelope.

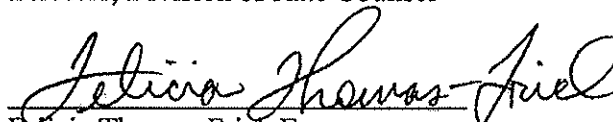
Honorable Kristi Izzo, Secretary
June 20, 2012
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Thank you for your consideration and assistance.

Respectfully submitted,

STEFANIE A. BRAND
Director, Division of Rate Counsel

By:


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Deputy Rate Counsel

FTF/sm

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**Comments on CEEEP's
DRAFT Energy Efficiency Cost-Benefit Analysis
Avoided Cost Assumptions (dated June 5, 2012)**

**Initial Comments of the New Jersey
Division of Rate Counsel**

June 20, 2012

The Division of Rate Counsel ("Rate Counsel") would like to thank the New Jersey Board of Public Utilities' ("BPU") Office of Clean Energy ("OCE") for the opportunity to provide our comments on Rutgers Center for Energy, Economic & Environmental Policy's ("CEEEP") draft avoided cost assumptions ("CEEEP Draft"), circulated to stakeholders by Ms. Jaci Trzaska of CEEEP in an e-mail notice issued June 7, 2012 ("June 7th e-mail"). The CEEEP Draft is titled "DRAFT Energy Efficiency Cost-Benefit Analysis Avoided Cost Assumptions", dated June 5, 2012.

The CEEEP Draft contains CEEEP's proposed estimates on avoided cost assumptions for Wholesale/Retail Natural Gas and Electricity, Capacity, and CO₂. CEEEP is developing these avoided costs as key inputs for its cost benefit model. CEEEP also noted in the June 7th email that CEEEP's avoided cost estimates will be used by the utilities in their RGGI filings and by EnerNOC for its energy efficiency market potential study undertaken on behalf of the New Jersey Clean Energy Program ("CEP").

Summary and Recommendations

Overall, Rate Counsel recommends that various key assumptions underlying CEEEP's avoided cost estimates be revised. A summary of Rate Counsel's evaluation of these

assumptions, as well as our key recommendations, are presented below and followed by more detailed explanations.

- **Wholesale and Retail Electricity Price:** CEEEP is not using appropriate methods for the projection of retail electricity prices and wholesale prices, which results in inconsistent price forecasts between retail and wholesale markets.
- **Wholesale Electricity Price:** Rate Counsel recommends that CEEEP utilize the results of the most recent PJM electricity futures market prices for the near term, through 2015. For the long-term electricity prices beyond 2016, Rate Counsel recommends that CEEEP apply the electricity price trend for electric power generation in the Mid-Atlantic region projected by the US Energy Information Agency's ("EIA") Annual Energy Outlook 2012 Early Release ("AEO 2012 Early Release") through the last year presented.
- **Retail Electricity Price:** Rate Counsel recommends that CEEEP use sector-specific historically-based retail price adders to estimate retail electricity prices, rather than using the annual growth rates from the EIA's Annual Energy Outlook ("AEO").
- **Wholesale Natural Gas Price:** CEEEP's use of the AEO 2012 Early Release forecast is a reasonable approach, but there should be an acknowledgement of the fact that current NYMEX Henry Hub natural gas futures are currently much lower.
- **Retail Natural Gas Price:** Rate Counsel believes that CEEEP should estimate annual average prices based on 2011 monthly price data for the residential and industrial sectors instead of the 2010 annual average prices. This approach

provides prices that more accurately represent the 2012 annual average prices. For consistency, retail natural gas prices should be calculated by applying appropriate adders - to the wholesale price - based on historic data.

- **Capacity Price:** The starting basis for CEEEP's electricity generation capacity price projection (presented in Table 3 of the CEEEP Draft) appears to be too high. Given the historical wide variation in auction results, Rate Counsel recommends that CEEEP estimate a multi-year average as a mid-point estimate starting in 2016. CEEEP's approach uses recent prices that contain atypical values. CEEEP should also consider taking into account likely future changes in the RPM auction, such as the effects of bidding energy efficiency into the RPM market.

Retail Electricity Prices and Wholesale Electricity Prices

Overall, Rate Counsel finds that CEEEP's proposed method for the projection of retail electricity prices and wholesale prices results in an inconsistency between the price forecasts for the retail and the forecasts for the wholesale markets. CEEEP's retail electricity price projection is based mainly on the annual growth rate of retail "electricity" rates for the Mid-Atlantic region from the AEO 2012 Early Release. On the other hand, CEEEP's wholesale electricity price projection is based on the annual growth rate of wholesale "natural gas" price forecasts for the region from the AEO 2012 Early Release. The latter analysis by CEEEP assumes that natural gas sets wholesale electricity prices at all times. However, other energy resources also set market prices in the real PJM market. Thus, CEEEP's retail electricity price forecast is very different from its wholesale price forecast. This outcome is reflected in the difference between the retail price and wholesale price in year 2030, as presented in Table 1 of the CEEEP Draft. Residential

retail prices increase by roughly 33% from 2011 to 2028. In contrast, the average wholesale electricity prices increase by over 100%, from \$47 per MWh in 2011 to about \$100 per MWh in 2028. Rate Counsel also notes that CEEEP forecasted almost no increase in the commercial and industrial prices for that period.

Rate Counsel offers the following additional comments and recommendations:

- The projection of near-term wholesale electricity prices is available through NYMEX electricity futures for the PJM market. Rather than projecting wholesale prices for the near term using EIA's natural gas price forecasts, Rate Counsel recommends that CEEEP utilize the results of the most recent PJM electricity futures market prices, which are available for the years up to 2015. In January 2012, Synapse forecasted wholesale electricity prices in New Jersey based on historic data and the then current futures in the context of the New Jersey Basic Generation Supply ("BGS") auction. Synapse's analysis yielded somewhat lower prices than those found in CEEEP's Draft. For example, Synapse's 2015 New Jersey forecast price was \$46.8/MWh, which is 14% lower than the value of \$54.34/MWh given in Table 1 of CEEEP's Draft. Since electricity futures have since declined along with natural gas futures, current price projections would be even lower. Therefore, it would be reasonable to use PJM futures up through 2014 or 2015 with a markup based on historic differences for supply to New Jersey.
- For the long-term wholesale electricity prices beyond 2015, Rate Counsel recommends that CEEEP apply the AEO electricity price trend for electric power generation in the Mid-Atlantic region up to the last year of the futures prices used in its calculations, e.g.

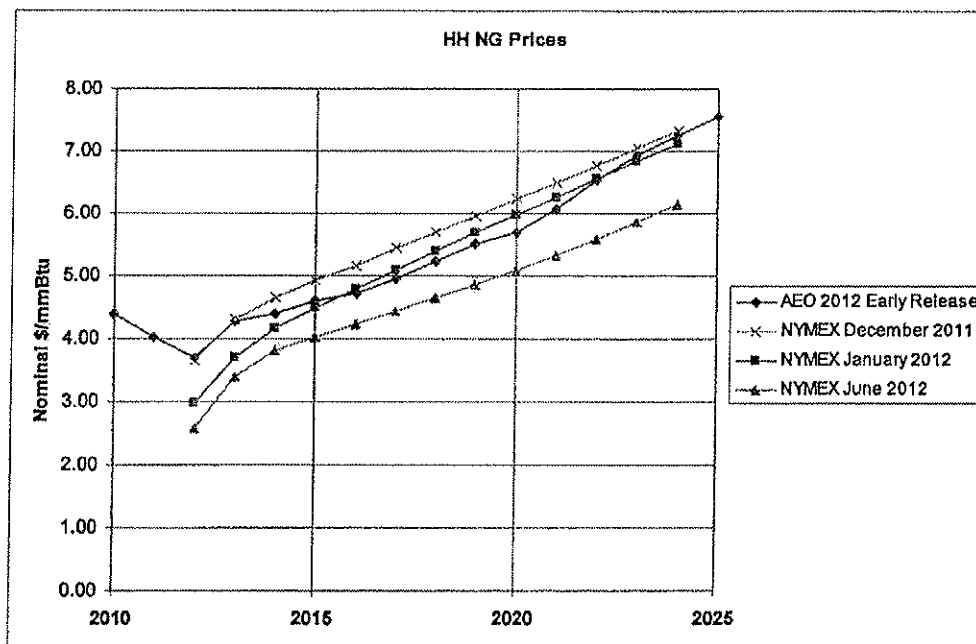
if the AEO generation price increase from 2015 to 2016 is 1.5%, that percentage increase should be applied to the 2015 futures-derived price.

- For the projection of retail electricity prices, Rate Counsel recommends that CEEEP use sector-specific retail price adders (either as a fixed dollar amount or as a % of wholesale electricity prices) to estimate retail electricity prices. This approach would maintain a realistic relationship between the retail and wholesale electricity rates. Retail adders can be estimated by taking the differences between historical prices at the retail and wholesale levels by sector over the past few years.

Wholesale Natural Gas Prices

Wholesale natural gas prices are represented in Table 2 of the CEEEP Draft. The Henry Hub (“HH”) wholesale prices represent the forecast from the AEO 2012 Early Release. While generally that is a reasonable approach, any avoided cost analysis produced in June 2012 should acknowledge that current natural gas futures prices are now much lower. To illustrate this change, the following figure (Figure 1) shows the AEO forecast and the HH natural gas (“NG”) futures prices over the last six months.

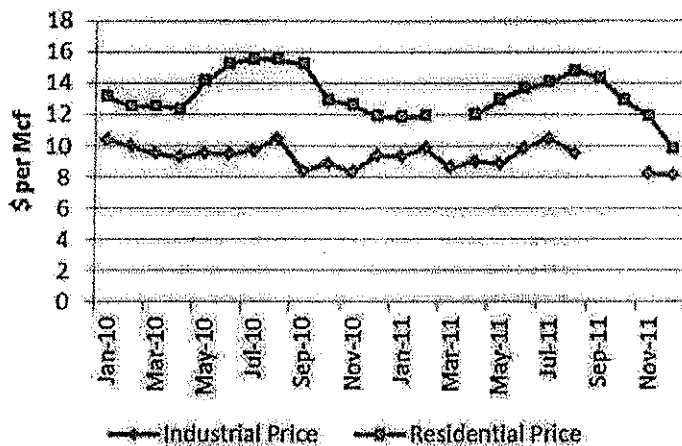
FIGURE 1. Henry Hub Wholesale Natural Gas Prices



Retail Natural Gas Prices

CEEPP uses 2010 retail natural gas prices instead of 2011 prices as the base prices for the residential and industrial sectors because EIA does not provide 2011 full year average retail prices for these sectors. This is not a reasonable approach because there was a drop in wholesale natural gas prices from 2010 to 2011 and also because gas prices are actually available for most of the months in 2011 for these sectors (See Figure 2 below). Thus, Rate Counsel strongly suggests that CEEPP use the 2011 monthly gas prices and interpolate prices for the months which are missing data. As shown in Figure 2 below for New Jersey gas prices based on EIA data, one can interpolate reasonable gas prices for the missing months. Estimating annual average prices based on 2011 monthly price data for the residential and industrial sectors provides prices that more accurately represent the 2011 annual average prices.

FIGURE 2. Historical Monthly Residential and Industrial Natural Gas Prices in NJ



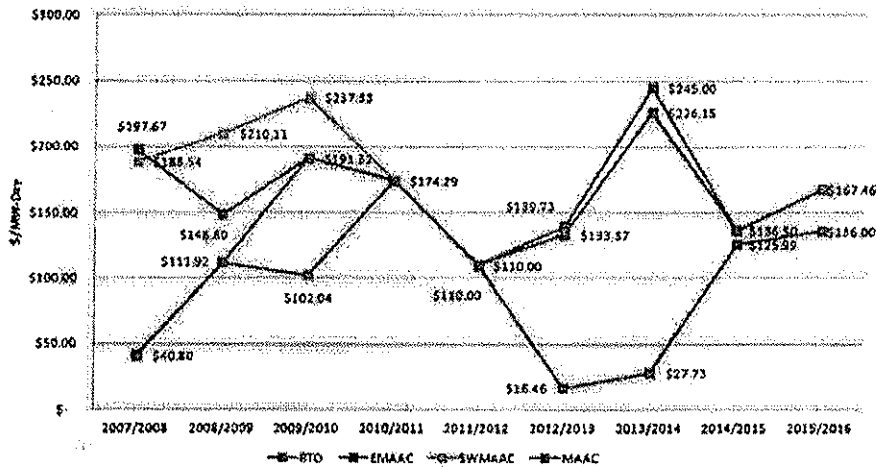
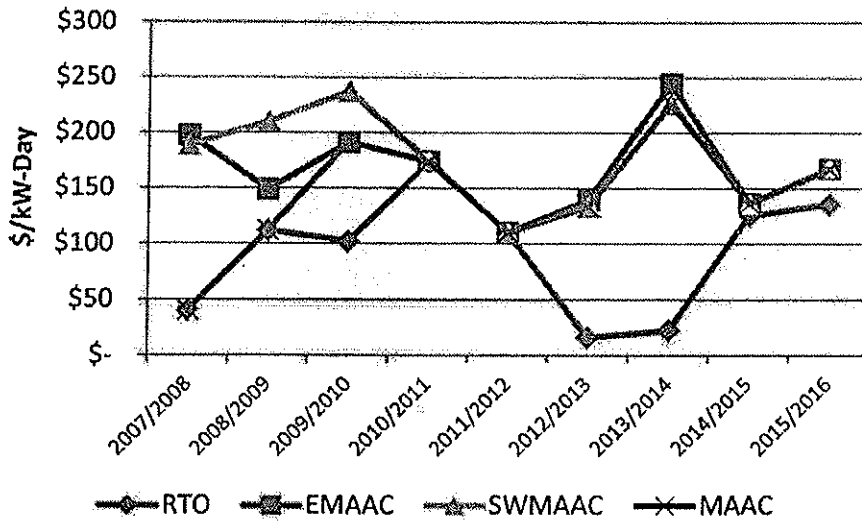
For estimating future retail natural gas prices, CEEEP escalates the base retail natural gas prices using an annual growth rate derived from the AEO 2012 Early Release. Whatever wholesale natural gas price forecast is used, the retail prices should be linked to same. Rate Counsel suggests that CEEEP use sector-specific retail price adders (either as a fixed dollar amount or as a % of the wholesale prices) to estimate retail natural gas prices. That approach will maintain realistic historic relationships between the retail and wholesale prices

Capacity Prices

The starting basis for CEEEP’s electricity generation capacity price projection (presented in Table 3 of the CEEEP Draft) appears to be too high. CEEEP’s methodology appears to give too much weight to the most recent auction results and does not properly consider the extreme variations that have occurred. Rate Counsel finds that this approach is problematic because (1) the PJM RPM capacity market has historically exhibited volatility and, therefore, no trends can

be clearly discerned; and because (2) the value given for 2014 shown in Table 3 contains the 2013/2014 RPM auction result which had highest auction price to date. These points are shown in the chart below (Figure 3). New Jersey capacity prices are generally represented in PJM's Eastern MAAC ("EMAAC") prices. While PJM's PSE&G-North region has twice been constrained in RPM auctions (2012/13 and 2014/15), at other times it has cleared at the same price as other New Jersey regions. Given the transmission upgrades in the area, the PSE&G-North region is unlikely to be constrained as a separate locational deliverability area ("LDA") in the near term.

FIGURE 3. PJM RPM Base Residual Auction Resource Clearing Prices (RCP)¹

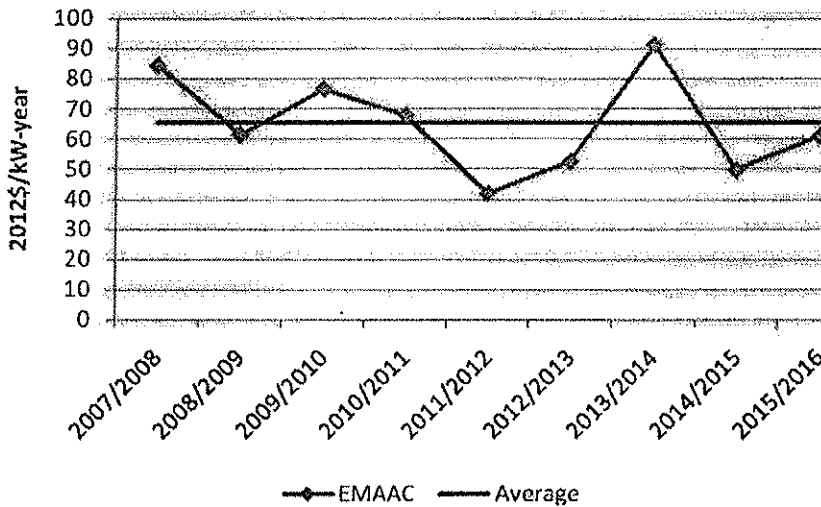


Given the historical wide variation in auction results, Rate Counsel recommends that CEEEP should first estimate a multi-year average and then project that forward as a mid-point estimate. The result would be a lower starting capacity price in 2015 and thereafter. Through the

¹PJM 2012. "2015/2016 RPM Base Residual Auction Results" available at <http://www.pjm.com/markets-and-operations/rpm/~media/markets-ops/rpm/rpm-auction-info/20120518-2015-16-base-residual-auction-report.ashx>

most recent RPM auction, the historical average is approximately \$65/kW-year in 2012\$ (see Figure 4 below).

FIGURE 4. EMACC RPM Historical Auction Results and Average Price (2012\$/kW-year)²



Additionally, Rate Counsel notes that historical capacity prices in New Jersey do not include the effects of CEP energy efficiency programs since CEP has not yet bid any capacity from its energy efficiency programs into the market. When NJCEP starts bidding energy efficiency into the RPM market, future capacity prices would likely be lower than they would be otherwise. CEEEP should take this factor into account when forecasting future prices.

Finally, Rate Counsel recommends that CEEEP use the GDP inflator instead of the CPI to forecast capacity prices on and after 2016 where no auction results are available. The GDP better represents the entire economy than the CPI. The CPI represents a more limited set of commodities.

² The historical capacity prices and the average price in 2012\$/kW-year were converted from nominal\$/MW-day.

Avoided Electric and Natural Gas Losses

CEEEP uses a 1.4% natural gas pipeline loss factor based on an ongoing energy efficiency potential study by EnerNoc Utility Solutions. Since EnerNoc's study has not yet been published, Rate Counsel recommends that CEEEP explain the underlying approaches and assumptions used by EnerNOC for its 1.4% natural gas loss factor estimate.

Avoided Cost of CO₂ Emissions

CEEEP proposes to use values for the Social Cost of Carbon taken from the Interagency Working Group ("IWG") on the Social Cost of Carbon. CEEEP proposes to convert the reported values (2007\$/metric ton) to nominal dollars using the EIA-projected US CPI. While Rate Counsel does not agree that the value provided by the IWG is the appropriate "social cost" of carbon emissions, Rate Counsel agrees that the IWG value is not an unreasonable assumption (or a starting point) as a proxy for future carbon reduction compliance costs at this time, given that New Jersey has a goal to reach 80% reduction from 2006 level by 2050 under the Global Warming Response Act of 2007. However, as mentioned above, Rate Counsel recommends that CEEEP use the GDP inflator rather than the CPI to project the future costs of avoided CO₂ emissions.