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New Jersey Board of Public Utilities,  
Office of Clean Energy

Submitted to: [publiccomments@njcleanenergy.com](mailto:publiccomments@njcleanenergy.com)

**RE: CEEEP Revised Draft Energy Efficiency Cost-Benefit Analysis Avoided Cost Assumptions**

Nexant is pleased to offer comments and observations in response to the NJBPU's request for comment on CEEEP's revised Draft Energy Efficiency Cost-Benefit Analysis Avoided Cost Assumptions dated July 25, 2012.

While the CEEEP document characterizes the future avoided costs shown as "assumptions" for analysis only and not "forecasts or projections", their intended use for Energy Efficiency cost-benefit analysis and the sources cited for these costs in the US Energy Information Agency (EIA) Annual Energy Outlook 2012 (AEO 2012) controvert this characterization and those qualifying statements.

The future avoided costs in the CEEEP report are clearly cost projections and forecasts and should be considered and evaluated as such, unabashedly, for better or worse. As future cost forecasts, it is important to understand:

1. whether they are expected value forecasts,
2. what definition of central tendency is used in these forecasts (mean, median, or some other),
3. what measures of variation around the mean have been considered,
4. what price scenarios and cost inputs other than mean price scenarios have been analyzed, and
5. how have risks of deviation from the mean been measured and taken into account.

We note that the CEEEP report explicitly describes the Table 5: Social Cost of Carbon in this report as the "Forecasted CO2 Social Cost," and the report states that CEEEP is researching "sources of SO2 and NOx allowance price projections" to extend Table 6: Historical SO2 and NOx Emissions Allowance Prices.

While the high level of aggregation by annual and seasonal peak and off-peak prices shown in the summary tables contained in the CEEEP report may match the level of aggregation currently implemented in some New Jersey Clean Energy Programs, more disaggregated data on historical and projected avoided costs can and should be developed to permit more precise cost-benefit analysis of energy efficiency programs.

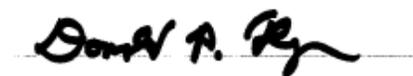
A deeper analysis of the data sources cited and of data available from the EIA and PJM and from utility state and federal regulatory filings will permit more detailed avoided cost projections, which are further disaggregated in terms of chronology, by location, and by customer class. Greater disaggregation is feasible for all the costs and prices show in the summary tables of the CEEEP report, including:

- Table 1: Retail and Wholesale Energy,
- Table 2: Retail and Wholesale Natural Gas,
- Table 3: Capacity Price
- Table 4: Avoided Electric T&D Cost

In particular, the projected annual average capacity prices for New Jersey shown in Table 3 should be further disaggregated to account for differences of LOLP both chronologically and by location.

Again, Nexant welcomes the opportunity to provide comments to assist the Board in its goals to achieve cost-effective energy efficiency savings for the State of New Jersey. Please don't hesitate to contact me if you have questions.

Sincerely,



**Don Flynn, MBA, CEM, CEA**  
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CHRIS CHRISTIE  
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August 6, 2012

**Via Overnight Delivery and Electronic Mail**

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

**Re: DRAFT Energy Efficiency Cost-Benefit  
Analysis Avoided Cost Assumptions  
(Revised July 25, 2012)**

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  
August 6, 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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**Re: DRAFT Energy Efficiency Cost-Benefit  
Analysis Avoided Cost Assumptions  
(Revised July 25, 2012)**

**Comments submitted by the  
New Jersey Division of Rate Counsel**

August 6, 2012

On June 20, 2012, the New Jersey Division of Rate Counsel (“Rate Counsel”) submitted comments on the DRAFT *Energy Efficiency Cost-Benefit Analysis Avoided Cost Assumptions* report (“CEEEP Initial Draft”), dated June 5, 2012, by the Center for Energy, Economic & Environmental Policy (“CEEEP”) of Rutgers University. In response to stakeholder comments to the CEEEP Initial Draft, CEEEP circulated a revised draft dated July 25, 2012 (“CEEEP Revised Draft”), inviting comments by interested parties. This memo summarizes Rate Counsel’s comments on the CEEEP Revised Draft. Rate Counsel’s comments on general issues and on certain specific avoided cost components are presented below.

**A. General Issues**

Rate Counsel submits that CEEEP’s avoided cost estimates should be considered as only first cut projections. While CEEEP’s avoided cost estimates can be used for the upcoming CEEEP’s benefit cost analyses as well as EnerNOC’s energy efficiency potential study for New Jersey, a more detailed analysis should be carried out to develop more reliable forecasts for other future analyses. More specifically, Rate Counsel recommends that the Office of Clean Energy (“OCE”) issue a RFP to conduct a detailed avoided cost study for New Jersey. Rate Counsel’s recommendation is consistent with the intention for the avoided cost assessment plan prepared

by CEEEP in the “2010-2011 Evaluation and Research Plan”, dated January 27, 2010. The Final Report of CEEEP’s 2010-2011 Evaluation and Research Plan states:

**Purpose and Rationale: Purpose:** This study would develop a set of avoided costs that would be used for screening of all efficiency measures and programs, and to accurately characterize the benefits from renewable generation and capacity through the use of an electric system dispatch model that encompasses PJM. That would include an assessment of avoided transmission and distribution costs, demand reduction induced price effects (DRIPE), and environmental externalities – to the extent they are not internalized into the market - and risks associated with relying solely on supply-side alternatives to meeting energy needs. Recent work done for New England would be a good example from which to start.

Avoided costs assumptions are perhaps the most critical of all assumptions in assessing the cost-effectiveness of programs because they affect screening of every measure and program. **Energy markets are very complex and warrant an independent assessment by outside experts who do such work in numerous jurisdictions** [emphasis added]. Where such work is not done, there is a tendency to rely on market data that significantly understate key components of avoided costs (see LBL study showing EIA gas price forecasts are routinely under-estimated) and/or do not address effects such as DRIPE and the risk-mitigating benefits of demand-side investments that can also significantly affect cost-effectiveness screening.<sup>1</sup>

Accordingly, a more detailed study should also include estimates of New Jersey-specific avoided Transmission and Distribution (“T&D”) costs as well as the following two benefits not included in the CEEEP Revised Draft:

- (1) Effect on market prices of reduced demand resulting from Energy Efficiency (“EE”) programs; and
- (2) Reduced payments for the Renewable Energy Certificates (“RECs”) based on reduced load due to energy efficiency programs.

Other states and regions have conducted more detailed avoided cost studies. For example, in New England a group representing all of the major electric and gas utilities in New England as well as efficiency program administrators, energy offices and regulators sponsored a

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<sup>1</sup> CEEEP 2010. 2010-2011 Evaluation and Research Plan: New Jersey’s Clean Energy Program Energy Efficiency and Renewable Energy Programs, Final Report, January 27, 2010, page 20.

biennial study to forecast avoided energy supply costs to be used regionally.<sup>2</sup> California is another region that develops and periodically updates detailed avoided cost studies for electricity and natural gas energy efficiency programs.<sup>3</sup> California's avoided cost studies are required and conducted under regulatory proceedings before the California Public Utilities Commission.

## **B. Electricity Prices**

The current wholesale electricity price forecast presented in the CEEEP Revised Draft appears more reasonable than the forecast presented in the earlier draft. The seasonal prices also appear quite reasonable.

The retail prices have also been adjusted. However, while the adjustments adequately account for changes in wholesale prices, they do not appear to be sufficient to account for any inflationary increases in non-energy related costs (particularly transmission and distribution costs) for commercial and industrial customers. That is, the increase in the commercial & industrial retail price from 2011 to 2035 corresponds to the increase in wholesale prices, while the increase in residential prices is almost twice as much as the wholesale price increase.

Additionally, Rate Counsel maintains that retail prices should only be used for estimating benefits for program participants.

## **C. Natural Gas Prices**

Rate Counsel has no issues with the new natural gas forecast.

## **D. Capacity Prices**

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<sup>2</sup> See <http://www.synapse-energy.com/Downloads/SynapseReport.2011-07.AESC.AESC-Study-2011.11-014.pdf>

<sup>3</sup> See [https://www.ethree.com/public\\_projects/cpuc4.php](https://www.ethree.com/public_projects/cpuc4.php)

The revised methodology presented in the CEEEP Revised Draft makes better use of the existing PJM reliability pricing model (“RPM”) data and the new forecast appears much more reasonable. The revised forecast presented in the CEEEP Revised Draft is a reasonable high-level estimate at this time. However, development of a more exact estimate would require a detailed analysis of the future operation of the PJM RPM construct, including projections of peak demand and capacity.

#### **E. Inflation Adjustment**

Rate Counsel maintains its position that the use of a GDP rather than a CPI inflator is a better measure for energy-related costs in general.

#### **F. Avoided T&D Costs**

CEEEP proposes to use an avoided T&D cost of \$30/kW-year following EnerNOC’s recommendation. This estimate appears reasonable as a first-cut projection, though on the very low-end of avoided T&D costs seen in other jurisdictions with aggressive EE programs. Further investigation should be undertaken to develop New Jersey-specific T&D costs. Particular attention should be given to the costs of transmission expansions associated with future load growth.

#### **G. CO<sub>2</sub> Costs**

CEEEP proposes to use values for the Social Cost of Carbon taken from the Interagency Working Group (“IWG”). CEEEP proposes to convert the reported IWG values (2007\$/metric ton) to nominal dollars using the EIA-projected US CPI. 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 starting point) as a proxy for future carbon reduction compliance costs at this time, given that New Jersey has a goal of reaching an 80% reduction from 2006 levels 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 CO<sub>2</sub> emissions.