STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

The Peoples Gas Light and Coke Company	)	
North Shore Gas Company	)	
	)	Docket No. 13-0550
Petition Pursuant to Section 8-104 of the Public Utilities Act to Submit an Energy Efficiency Plan	)	

DIRECT TESTIMONY
OF
MICHAEL MARKS

Q. Please state your name and business address.

A. Michael Marks, 1377 Motor Parkway, Suite 401, Islandia, New York 11749.

Q. By whom are you employed?

A. Applied Energy Group, Inc. ("AEG"). AEG is a division of Ameresco, Inc.

Q. What position do you hold with AEG?

A. I am the President of AEG.

Q. What are your responsibilities in that position?

A. I lead the AEG division of Ameresco, which has over 70 employees, in its natural gas and electric utility consulting practice. I actively participate in many of our projects, providing project management and analysis for a variety of different assignments. I have had significant involvement in many of AEG's energy efficiency related projects in the Midwest over the past fifteen years.

Q. Please summarize your educational background and experience.

A. I have a M.A. in Applied Economics from the State University of New York at Binghamton and B.S. in Mathematical Economics from the State University College of New York at Oswego.

I have over 30 years of project management, technical analysis, management consulting, and decision-support experience in the electric and gas utility industries. I specialize in the areas of demand side management program planning, design, implementation, evaluation and regulatory compliance. In addition, I perform statistical analysis, load forecasting, strategic issues consulting, and comparative economic studies for many of AEG's clients. I have provided overall project management for many of AEG's largest projects and have consulted to over 60 natural gas and electric utility clients, many of which I have worked for on multiple projects on a long-term basis. I also provided consulting services internationally for utilities in Canada, South Africa, Bermuda, and Thailand.

Q. Are you including any attachments with your testimony?

A. Yes. NS-PGL Ex. 1.1 contains my résumé. NS-PGL Ex. 1.2 contains the Energy Efficiency Program Plan for the Petitioners, The Peoples Gas Light and Coke Company ("Peoples Gas") and North Shore Gas Company ("North Shore Gas"), (together, the "Utilities").

Q. Please summarize your testimony.

A. In July of 2009, the Governor signed into law Public Act 096-0033, establishing energy efficiency goals, energy efficiency filing requirements and

cost recovery mechanisms and energy efficiency program expenditures for Illinois gas utilities servicing more than 100,000 gas utility customers. Under Section 8-104 of the Public Utilities Act (220 ILCS 5/8-104) ("Section 8-104"), the natural gas energy efficiency goals for each affected natural gas utility is a cumulative reduction of 8.6% of natural gas use by May 31, 2020, measured against 2009 gas deliveries to certain retail customers.

As of this date, the Utilities are four months into the final year of the first three-year Energy Efficiency Program Plan (hereafter referred to as "First Triennial Plan") which I helped prepare in 2010.

This testimony is for the Second Triennial Energy Efficiency Program Plan (hereafter referred to as "Second Triennial Plan") for each of Peoples Gas and North Shore Gas which, if approved, commences June 1, 2014 and ends May 31, 2017, covering Program Years 4 through 6.[1] The Utilities' witness Edward M. Korenchan (NS-PGL Ex. 2.0) addresses Section 8-104 filing requirements not covered in my testimony and, importantly, shows the funding cap.

Q. Are there any major differences between the Second Triennial Plan and the First Triennial Plan you provided testimony for in 2010?

A. Yes. The First Triennial Plan was designed to achieve the requirements of Section 8-104 in a prudent and cost-effective way, within the funding cap. Those annual savings goals for Program Years 1, 2 and 3 were 0.2%, 0.4% and 0.6% respectively[2].

[1] Program Year 4 is June 1, 2014 - May 31, 2015; Program Year 5 is June 1, 2015 - May 31, 2016; Program Year 6 is June 1, 2016 - May 31, 2017.
[2] Program Year 1 is June 1, 2011 - May 31, 2012; Program Year 2 is June 1, 2012 - May 31, 2013; Program Year 3 is June 1, 2013 - May 31, 2014.

Section 8-104 contains annual savings goals for Program Years 4, 5 and 6 of 0.8%, 1.0% and 1.2%, respectively. Under Section 8-104, the Utilities may not exceed charges to its customers of more than 2% of gross revenue to fund the programs necessary to achieve these savings goals. While the savings and funding goals were both achievable when the Utilities prepared their First Triennial Plan, the statutory goals under Section 8-104(c) are not achievable in the Second Triennial Plan.

Q. What is the main reason for not being able to achieve the savings goals in the Second Triennial Plan?

A. A number of events have occurred over the past three years which have made it much harder to achieve the Section 8-104 savings goals for Program Years 4 through 6. Natural gas prices have continued their steady decline which began five years ago. In June of 2008, the Henry Hub Gulf Coast Natural Gas Spot Price reached a high of $12.69 per million Btus. Since then the price has steadily declined. In August of 2013, the price was $3.43 per million Btus. This has reduced the potential bill savings and increased the payback period for customers investing in energy efficiency. Thus, customers need higher incentives to achieve the paybacks necessary to make investments in efficiency. This increases the cost per therm saved and reduces the amount of savings that can be achieved under the fixed funding cap.

Lower gas prices also reduce the size of the funding cap. The amount of the cap has dropped 9.4% from the First Triennial Plan level for Peoples Gas and 18.5% for North Shore Gas.

To summarize, lower gas prices make it more expensive for the Utilities to obtain savings and, at the same time, reduce the amount of funds available for the programs. It is highly unlikely that either Peoples Gas or North Shore Gas will be able to achieve the statutory savings goals for Program Years 4, 5, and 6. As described below we believe, subject to certain caveats indicated herein that, during the Second Triennial Plan's deployment, the following amounts of therms can be saved for People Gas and North Shore Gas. Peoples Gas estimates cumulative savings over Program Years 4 through 6 of 24,612,177 therms. North Shore Gas estimates cumulative savings over Program Years 4 through 6 of ~~5,543,116~~ 4,757,013 therms.

Q. **What percent of the statutory savings goal for Peoples Gas and North Shore Gas are you proposing to accomplish?**

A. The Utilities share statutory savings goals with The Department of Commerce and Economic Opportunity ("DCEO"), with 80% of the savings allocated to the Utilities and 20% to DCEO. The statutory savings goal for Peoples Gas is 11,226,846 therms for Program Year 4, 14,033,558 therms for Program Year 5, and 16,840,269 therms in Program Year 6, collectively 42,100,673 therms. The proposed savings are .76%, .59%, and .46% of the benchmark, respectively. For North Shore Gas, the statutory savings goals are 2,220,143 therms for Program Year 4, 2,775,179 for Program Year 5, and 3,330,215 for Program Year 6, collectively 8,325,537 therms. The proposed savings are ~~.84~~.72%, .~~66~~.58%, and .~~55.~~47%, respectively. This information is detailed in Tables 2A and 2B in the Second Triennial Plan.

Q. Is there any "hard evidence" to support the Utilities' position that it is highly unlikely that they can meet the Program Years 4 through 6's Section 8-104(c) savings goals?

A. Yes. The Utilities are just finishing the first quarter of the third year of the First Triennial Plan. With more than two years of experience implementing a comprehensive portfolio of natural gas efficiency programs, the Utilities have very accurate data on costs associated with savings by end use and customer type. Based on this experience, the Utilities have modified their program designs based on this "real world" experience. The Utilities have also learned first-hand how difficult it is to achieve these savings under a low gas price environment.

The Second Triennial Plan attached as NS-PGL Ex. 1.2 to this testimony reflects the actual program experience that the Utilities have had over the past 28 months of implementation activities.

Q. Is there any other information to support the Utilities' position it is highly unlikely that they can meet the cumulative Program Years 4 through 6's Section 8-104(c) savings goals?

A. Yes. In 2012, the Utilities retained the services of the Energy Center of Wisconsin to conduct a comprehensive market potential study (the "Potential Study"). The goal of the Potential Study was to review energy efficiency opportunities and provide an estimate of the achievable potential for natural gas savings in each of the Utility's service territory. The Potential Study was completed in 2013 and presented to the Stakeholder Advisory Group ("SAG") in

March 2013.[3] The Potential Study included primary data collection from residential, commercial and industrial customers. One of the key conclusions of the Potential Study was that low gas prices reduced the achievable potential for cost effective energy savings to levels below any of the Program Years 4 through 6 savings goals.

Q. Do you agree with this conclusion?

A. In general, yes. While the SAG did identify some issues with the benefit-cost screening criteria used in the Potential Study that would have allowed for more measures to be included in the final achievable totals, the Potential Study was generally well received by the SAG participants. Regardless, the added measures identified by certain SAG members would not have materially increased the total potential by enough to change the overall conclusion of the Potential Study identifying low gas prices constraining the potential savings to below the 0.8% range in each of the year 4, 5, and 6 Program Years.

Q. Section 8-104(d) allows the Commission to approve reduced savings levels. What level of savings goals are Peoples Gas and North Shore Gas asking the Commission to approve for the Second Triennial Plan period?

A. The Utilities are requesting approval for a three-year natural gas savings goal of 24,612,177 therms for Peoples Gas and ~~5,543,116~~4,757013 4,757,013 therms for North Shore Gas.

[3] The Stakeholder Advisory Group or SAG is an advisory group made up of various energy efficiency stakeholders including the utilities, Illinois Commerce Commission (ICC) Staff, consumer interest groups, DCEO, energy efficiency consultants and others. SAG allows for the parties to collaborate and share opinions and insights into portfolio and program design, in addition to serving as a collaborative body to vet and create the Technical Reference Manual ("TRM") each Program Year.

Q. What methodology did you use to determine savings goals for the Second Triennial Plan?

A. The first step was to determine the funding cap for each Utility. Next, we allocated 75% of the funding cap to each utility and the remaining 25% to DCEO. Third, we set aside funding needed for EM&V at 3% of the total, amounts allocated to Peoples Gas and North Shore Gas for the Research & Development project for New Construction Building Codes and Standards, and estimated costs for the Third Triennial Plan development in Program Years 5 and 6. The remaining funds were available for program implementation and portfolio administration. To develop the program implementation plan and portfolio administration detail, we analyzed actual costs experienced in Program Year 1 and Program Year 2 to date, studied potential market available by end use measure, incorporated lessons learned and drafted our plan. The gross savings that we assumed for each measure was based upon the most recent TRM. Net-to-gross adjustments were based on the most recent impact evaluations.

Q. What does the remainder of your testimony cover?

A. I will provide an overview of the proposed Second Triennial Plan. I will recommend a modified net-to-gross framework based upon ongoing discussion at the SAG. I will propose an “Adjustable Savings Goal” process to adjust the proposed natural gas reduction goals in the Second Triennial Plan due to changes in either the Technical Reference Manual (“TRM”) or net-to-gross ratios.

Q. Please provide an overview of Petitioners’ proposed Second Triennial Plan for the period June 1, 2014 through May 31, 2017.

A. Peoples Gas and North Shore Gas, wholly-owned subsidiaries of Peoples Energy, LLC, a wholly-owned subsidiary of Integrys Energy Group, Inc., propose a portfolio of natural gas energy efficiency programs and On-Bill Financing ("OBF") programs within the funding cap as required by Section 8-104. As previously discussed, the proposed portfolio will not meet the savings goals specified by Section 8-104, and, as provided on Section 8-104(d), the Utilities are requesting the Commission to approve reduced levels.

As stated above, the Utilities are responsible for 80% of the statutory savings requirement, using no more than 75% of the budget, with the DCEO responsible for 20% of the statutory savings requirement and the ability to use 25% of the budget. While Peoples Gas and North Shore Gas have a common parent corporation, the savings and budgets are not combined and each utility has its own savings plan and budget.

The Utilities have worked diligently to design flexible, scalable, best practice programs that allow for partnering with the neighboring electric utility (Commonwealth Edison Company or "ComEd") and streamlining administration and delivery while maximizing customer participation. ComEd is the electric utility providing service in both Peoples Gas' and North Shore Gas' service territories. The Utilities have partnered with ComEd in many of its programs and measures. Coordinating with ComEd allows for a better customer experience.

Through the Utilities' cooperative programs with ComEd, working with a variety of stakeholders and 28 months of program implementation experience in the Utilities' service territories, these programs reflect the Utilities' considerable

knowledge and experience of what is possible to successfully implement an energy efficiency program. Further, the Utilities have worked with the neighboring gas utilities in Illinois (Ameren and Nicor) to share experiences and provide consistency in program design, where possible.

The proposed Plan includes a portfolio of programs that incentivize customers to become more energy efficient. All program offerings are integrated with energy efficiency awareness and education efforts and are intended to encourage customers to make more informed decisions about the way they use energy. NS-PGL Ex. 1.2 contains information on all aspects of the Utilities' proposed programs.

Q. What were Petitioners' key objectives in developing the Plan?

A. There are a number of objectives of this Second Triennial Plan. The Second Triennial Plan tries to achieve as high an annual savings goal as possible under the funding cap. However, we have not simply chosen the lowest annual cost programs. The Utilities have also looked at lifecycle costs as important criteria for program and measure selection.

Q. Can you provide an example of what this means?

A. The lowest cost program from an annual savings perspective is behavior change. However, it has a very short life or persistence and thus has a very high lifecycle cost. Conversely, a high efficiency heating system replacement is more expensive on an annual cost basis but has a long life and thus a low lifecycle cost.

The Utilities believe that both types of programs have an important place in the portfolio. Thus we use both annual and lifecycle cost in our decision process.

Q. What other objectives did you have in developing the Second Triennial Plan?

Additional objectives that were used in the development of the Second Triennial Plan included:

- Is cost effective at the portfolio level.
- Uses several implementation approaches and various paths to maximize program participation and minimize program administrative and delivery costs.
- Is easy to modify and adaptable to changing market conditions.
- Is scalable to ramp up or down as markets, technologies, and opportunities evolve.
- Offers a variety of programs, making energy efficiency opportunities available to all customer classes.
- Represents a cost-effective mix of programs aimed at ensuring overall portfolio success.

Q. Were you able to keep the sector energy goals and program budgets at approximately the same proportion as the revenues that each sector contributes to the customer base?

A. While we ensured there were programs available to all residential and commercial/industrial ("C&I") customers (excluding those served by DCEO), it

was not practical to keep the goals at approximately the same proportion as the revenues. In the current low gas price environment, it is becoming more and more difficult to find opportunities in the residential sector that are equivalent to its revenue share of the customer base. The potential increase in Department of Energy ("DOE") residential gas furnace efficiency standards could make achieving cost-effective residential energy savings even more difficult in the future.

Q. Please describe how the Second Triennial Plan addresses Peoples Gas and North Shore Gas separately.

A. The Peoples Gas and North Shore Gas portfolios were developed independently based upon the unique characteristics of each service area. While the portfolios as described NS-PGL Ex. 1.2 have the same five programs for each company, within those programs are specific features that best support the customers in each company. Program participation rates and associated budgets are tailored for each company based on customer demographics, markets, and budget constraints. The key differences between the two service areas that affect the savings potential were discussed in detail in the Potential Study.

Q. Please describe the Utilities' coordination with the DCEO in developing the Second Triennial Plan.

A. Through the SAG process, the Utilities communicated with DCEO during the planning process. As with the First Triennial Plan, all spending and savings for the low-income sector and the public sector will be DCEO's responsibility.

The Utilities have not designed or budgeted for any programs targeting low-income customers who pay directly for their own gas heating or water heating.

Q. Did the Utilities work with any other stakeholders in developing their Second Triennial Plan?

A. Yes. The Utilities recognize the importance of obtaining agreement among stakeholders in all phases of the Second Triennial Plan's lifecycle, from planning and program design, to implementation, evaluation, tracking and cost recovery. During the Second Triennial Plan's development, the Utilities met with each stakeholder to obtain input on issues that were important to them. Discussions were held with ICC Staff, the Illinois Attorney General's Office, Citizens Utility Board, The City of Chicago, and the Environmental Law and Policy Center. These discussions focused on many different issues including:

- Progress to date of our programs at the time of our meetings.
- Projections for goal attainment.
- Guiding principles and other issues associated with the Second Triennial Plan.
- Brief discussions of issues beyond the control of the Utilities.
- Results of the Potential Study.

All stakeholder input was considered in the preparation of the Second Triennial Plan. The Utilities continue their active participation in the SAG. These forums allow all stakeholders to work together to ensure a high quality, high performance energy efficiency program in the State of Illinois. In addition, the Utilities will

continue to work with the other Illinois utilities to discuss what's working, what's not and how we can better align and coordinate our programs.

Q. Please describe in more detail the Utilities' plan to coordinate with ComEd.

A. The Utilities have been jointly implementing programs with ComEd throughout the First Triennial Plan period. The Utilities have also been coordinating with ComEd during the development of the Second Triennial Plan. Specifically,

- Residential Programs – The Utilities and ComEd intend to jointly offer the JumpStart Direct Install Path. The Utilities and ComEd will cooperate in the Prescriptive Path, identifying and jointly offering measures that could benefit both gas and electric use.
- Multifamily Programs – The Utilities and ComEd intend to jointly offer the Direct Install Path. The Utilities and ComEd will cooperate in the Prescriptive and Custom Paths, identifying and jointly offering measures that could benefit both gas and electric use.
- Residential Outreach and Education Programs – The Utilities and ComEd intend to jointly offer an Education Program to schools.
- Business Programs-Existing Facilities –The Utilities and ComEd will cooperate in the offering of measures that could benefit both gas and electric use and provide a comprehensive service to customers.
- Small Business Efficiency Program - The Utilities and ComEd intend to jointly offer the Direct Install Path of this program.

Q. What energy efficiency measures do the Utilities plan to implement for residential customers?

A. The Utilities are offering three programs to residential customers. Each program includes two or more "paths." The programs and paths are described in detail in NS-PGL Ex. 1.2.

Residential single family homes will be offered two paths, (1) direct installation of measures such as low-flow showerhead, faucet aerator and water heater thermostat setback in addition to a high level assessment of the home, and (2) incentives for heating systems, water heaters, setback thermostats and pipe insulation.

Apartments in multifamily buildings will be eligible for direct installation of measures such as low-flow showerhead, faucet aerator, pipe insulation and water heater thermostat setback at no cost to the occupant or building owner. The multifamily program will also look for opportunities for larger energy savings such as space or water heating system replacements, boiler tune-ups and steam trap replacement/repairs. Trade ally partners will offer follow up services for these major improvements at pre-agreed upon discounted pricing.

Additionally, through the Residential Outreach and Education Programs, the Utilities will offer a behavioral change based program to provide single family homeowners with consistent feedback on their energy use, by comparing their gas usage to similar homes and offering tips to achieve energy savings. The Utilities will also work with ComEd to implement an energy efficiency education program for schools.

Q. Were any of the residential programs and associated paths the same as or similar to the First Triennial Plan's offerings?

A. While the First Triennial Plan's offerings were not organized into "paths," the measures are basically the same. Enhancements, such as performing a high level assessment while at the premises to look for opportunities for additional savings, has been more formalized as an integral part of the program. Another enhancement is the Single Family Direct Install program. While it was not specifically part of the First Triennial Plan that was offered, the need was identified and the program was implemented in Program Year 1.

Q. What energy efficiency measures do the Utilities plan to implement for commercial and industrial customers?

A. The Utilities are offering two programs to C&I customers. Each program includes two or more "paths." The programs and paths are described in detail in NS-PGL Ex. 1.2. C&I customers in existing facilities who install, replace or retrofit qualifying natural gas heating systems, water heating equipment, or food service equipment will be eligible for prescriptive rebates. Technologies that are not listed on the prescriptive rebate menu will be eligible for a custom rebate. Custom rebates are individually determined and analyzed using the benefit cost model to ensure that they pass the Total Resource Cost ("TRC") test. This program also offers engineering assessment and assistance in implementing projects that optimize gas used for building operations.

The Utilities will offer gas optimization services. This service will include retro-commissioning, which tests and optimizes system operations in the context

of how the building is currently used. Experts will analyze the building, suggest ways to optimize operation of energy using systems and identify no cost and low cost energy saving improvements, which can then be implemented by the customer. Some of these projects will be in partnership with ComEd as appropriate.

Additionally, and also in partnership with ComEd, the Utilities will offer a direct install program for small business owners. This program will provide eligible customers with direct installation of several low cost measures at no cost to the owner or tenant including low flow faucet aerators, showerheads, and pre-rinse sprayers. While at the small business owner's premises, a no cost walk through audit will be provided outlining other energy efficiency improvements that could be made. Other measures (such as programmable setback thermostats) will be available with incentives equal to 70% of the measure cost.

Q. Were any of the C&I programs and associated paths the same as or similar to the First Triennial Plan's offerings?

A. While the First Triennial Plan's offerings were not organized into "paths," the measures are basically the same. Enhancements, such as performing a high level assessment while at the premises to look for opportunities for additional savings, has been more formalized as an integral part of the program. Expansion of operational improvement projects, such as gas optimization, is an enhancement.

Q. Have the Utilities demonstrated, as required by Section 8-104(f)(1), that their proposed energy efficiency measures will achieve the required energy savings?

A. No. As discussed previously, the Utilities' Plan contains comprehensive portfolios with reasonable proposed energy savings based on the statutory spending limits set forth in Section 8-104. Section 8-104 recognizes that a utility may not be able, due to the spending limits imposed by Section 8-104, to meet the savings levels. For that reason, the Utilities are requesting that the Commission approve the reduced savings requirements stated earlier in my testimony.

Q. Have Petitioners presented, as required by Section 8-104(f)(2), specific proposals to implement new building and appliance standards that have been placed into effect?

A. Yes. The Utilities' programs were designed using applicable building codes and appliance standards to determine eligibility of certain measures and services for the inclusion of the Utilities' programs. If changes occur in new building and appliance standards during the programs' operational period, changes in program designs will be made to accommodate those new standards. In addition, the Utilities have included a budget line item for Research & Development. This budget supports a joint utility effort to train and assist in enforcement of Illinois Building Codes and Standards for both residential and commercial new construction and major retrofits. Because of its infancy and need for research, this effort has not been proposed as a program.

Q. Expressed on a per therm basis, as required by Section 8-104(f)(3), what is the estimated cost of energy savings that the programs will deliver?

A. Savings over the Second Triennial Plan period are estimated to cost $2.24 per therm for Peoples Gas and $~~1.77~~2.06 per therm for North Shore Gas. The annual cost for the programs is approximately $18.4 million for Peoples Gas and $3.3 million for North Shore Gas. The total cost for the three years is $55,250,151 for Peoples Gas and $9,818,706 for North Shore Gas. These values do not include funding for OBF or the DCEO's share of the budget but do include the cost for the independent evaluation, measurement and verification ("EM&V") contractor.

Q. As part of Petitioners' coordination with the DCEO, did Petitioners address low income programs, as required by Section 8-104(f)(4)?

A. The Utilities worked with DCEO to help identify the size of this market in terms of natural gas sales (therms) and revenue. DCEO has informed the Utilities, as well as all the other gas and electric utilities in Illinois, that it will take full responsibility for the low income goals as required by Section 8-104(f).

Q. As required by Section 8-104(f)(5), is the overall portfolio, not including low-income programs, cost effective using the TRC test?

A. Yes. The TRC result for the total portfolio, not including any savings or costs from DCEO, is 1.81 for Peoples Gas and ~~1.39~~ 2.16 for North Shore (meaning that benefits are approximately 1.8 and ~~1.4~~ 2.2 times greater than program costs, respectively).

Q. As required by Section 8-104(f)(5), does the Second Triennial Plan represent a diverse cross-section of opportunities for customers of all rate classes to participate in the programs?

A. Yes. The Utilities' programs provide opportunities for all classes of customers in all sectors to participate in at least one energy efficiency initiative. Programs are available to upgrade the efficiency of equipment that needs to be replaced, install new energy efficiency equipment, improve building shell efficiency, and encourage behavior that will help reduce energy use.

Q. As required by Section 8-104(f)(7), did Petitioners include a proposed cost recovery tariff mechanism to fund the Portfolio?

A. As part of its First Triennial Plan, the Utilities proposed and the Commission approved a tariff. Petitioners' witness Mr. Korenchan addresses the Utilities' tariff, Rider EOA.

Q. Does the Second Triennial Plan, as required by Section 8-104(f)(8), provide for quarterly status reports tracking implementation of and expenditures for its Portfolio of measures and DCEO's portfolio of measures?

A. Yes. The Utilities have retained the services of Franklin Energy Services, LLC ("Franklin Energy"). They were also the implementation contractor that was retained to implement the First Triennial Plan. Franklin Energy uses an energy savings and expenditures data tracking system built upon the Salesforce.com platform. This system, called Bensight, provides a robust and comprehensive energy efficiency program data management solution.

Q. Does the Second Triennial Plan, as required by Section 8-104(f)(8), provide for an annual independent review?

A. Navigant Consulting provides independent evaluation services for the Utilities. The current EM&V contract expires on May 31, 2014. The Utilities are evaluating vendors to perform EM&V services for the Second Triennial Plan

Q. Does the Second Triennial Plan, as required by Section 8-104(f)(8), provide for a full independent evaluation of the three-year results of the performance and the cost-effectiveness of the Portfolio and the DCEO portfolio as well as the broader net program impacts and, to the extent practical, for adjustment of the measures on a going forward basis as a result of the evaluations?

A. Yes. The EM&V contractor selected for the Second Triennial Plan will conduct at least one impact evaluation for each program during the three-year implementation cycle. Once results are available, they will be utilized to update net-to-gross ("NTG") ratios, improve program designs and reduce net cost per therm saved. DCEO has its own EM&V contractor.

Q. What are NTG ratios and why do they matter?

A. NTG ratios are adjustments that are made to the "gross" savings value. The gross savings value is the energy savings attributable to a measure's installation or implementation. Those gross savings values are adjusted for various factors (some positive and some negative), which are combined to derive one overall NTG ratio for a particular measure or program. The NTG values are determined through a variety of methods, including surveys of customers who

adopted particular energy efficiency measures and customers who did not adopt said measures. Adjustment factors that comprise the NTG ratio include:

1. Free riders.
2. Participant spillover.
3. Non-participant spillover.
4. Measure Persistence.

Q. Please explain each of the adjustments one might make.

A. Free riders are participants who, based on how they answer specific survey questions, are considered to be those who would have taken the same energy efficiency action without the program.

Participant spillover are participants who take additional actions as a result of the program but do not receive any incentives for these actions. Non-participant spillover can take a number of forms. A customer can take an action as a result of the program but those actions do not qualify them for any incentive and thus the energy savings they generate never gets credited to the program. Another customer might take an action as a result of the program which does qualify them for an incentive but they do not apply for the incentive and again the energy savings they generate never gets credited to the program.

Spillover can also occur among trade allies. Some trade allies may not participate in a program but stock higher efficiency appliances or equipment to be competitive with participating trade allies. Higher efficiency appliances or equipment may also be more efficient than the minimum but not qualify for rebates. Other trade allies may get increased business for direct install

measures due to the promotions done by the Utilities but may not be participating in the Utilities' direct installation program.

Measure persistence refers to efficiency measures which are credited as program participants but are removed or not replaced when they fail prematurely.

Q. Do you have a proposal for a NTG framework?

A. I would propose we modify the existing NTG framework as follows:

For existing programs, when a Utilities' evaluation of a program has identified an estimated NTG ratio, that ratio will be used prospectively until a new Utilities' evaluation estimates a new NTG ratio. The prevailing NTG ratio provided by the independent evaluator by March 1 of any Plan Year is the NTG ratio value to be applied to the next Plan Year beginning June 1.

For new programs, planning NTG ratio values that have been provided by the independent evaluator by March 1 of any Plan Year will be applied prospectively to the next Plan Year beginning June 1. These values will be used until the Utilities' evaluation estimates a revised NTG ratio. If the revised NTG ratio is provided by the independent evaluator by March 1, then the ratio will be applied to the next Plan Year beginning June 1. Thereafter, NTG ratios shall be revised according to the framework for existing programs.

The independent evaluator will calculate NTG ratios using estimates of free ridership, spillover from participating customers and contractors, and spillover from non-participating customers and contractors. Where spillover evaluations from Utilities' programs are not available, the independent evaluator may rely on values developed from evaluations of other programs. If an

evaluation is unable to account for spillover, then the free rider effect should also be ignored**.**

Q. Are the budgets associated with the required evaluations within the prescribed statutory limit?

A. Yes, evaluation budgets have been set at 3% of total program cost.

Q. Earlier, you referred to the TRM. What is the TRM?

A. The TRM is a document prepared by Vermont Energy Investment Corporation ("VEIC"), an independent contractor. The TRM document contains the savings values or engineering algorithms to be used by the utilities to estimate the savings for every different measure that is part of their efficiency portfolio. This document is reviewed and agreed upon by all members of the SAG. It is updated approximately every year.

Q. Do the gross measure level savings follow the Illinois TRM?

A. Yes. All gross measure level savings have been taken from the most up-to-date version of the Illinois TRM where available. Specifically, the Second Triennial Plan used the measures included in Illinois TRM V.2, currently under review in Docket 13-0437.

Q. How are the savings goals impacted by changes in the TRM?

A. They can have a significant impact. Changes can occur in the form of a fixed value or inputs and attributes to algorithms used to calculate the savings for a specific measure.

Q. How should changes in the TRM be reflected in terms of goal attainment?

A. The Utilities' proposed savings goals should be adjusted upward or downward to reflect any changes in the TRM, to the extent that those TRM values change the savings attributable to any measure.

Q. Are you suggesting that the annual goals approved by the Commission should be adjusted for changes in the TRM?

A. Yes. During each year of the Second Triennial Plan, the annual goal is based upon estimated participation rates for a variety of measures that customers will take to reduce their energy consumption. If the TRM changes for a particular measure, the Utilities are asking that the annual goal going forward be adjusted to reflect that change. Without this "Adjustable Savings Goal", the Utilities could achieve the exact participation rates that are contained in their approved plan and still fail to achieve the goal. That seems to be an unfair outcome.

Q. Are there any other effects of a changing TRM?

A. Yes. The Utilities have a performance-based contract with their implementation contractor. It is impossible to administer a performance-based contract if the goal criteria upon which the contractor is being measured changes.

Q. Who benefits from a performance based contract?

A. Ratepayers benefit. A performance based contract that is the product of a competitive bid shifts risk from the ratepayer to the implementation contractor.

Q. Are there any other changes in assumptions that would apply to the Adjustable Savings Goal?

A. The other assumption where this would be applicable is with changes in NTG ratios. While the exact mechanism upon which NTG will be applied in the Second Triennial Plan period is unclear, the primary issue is with retrospective application of NTG results.

In addition to the changes in the NTG Framework that I have proposed, I am recommending that prospective changes in NTG that occur should be used to adjust the savings goals for the year in which those changes are applied upward or downward in the same manner and for the same reasons as I just discussed for changes in the TRM.

Q. Does adjusting goals prospectively for changes in NTG take away the Utilities' incentive to provide the best designed and most cost effective programs?

A. No. This was the rationale for the original NTG Framework. By applying changes in NTG assumptions retrospectively, it was believed that utilities would "work harder and smarter" to avoid implementing programs that resulted in high levels of free ridership. I argued against this theory when I testified in 2010. The current SAG discussions in modifying the NTG Framework suggest that my perspective was the correct one. Further, the issue of retroactive application of NTG values is currently subject to rehearing in Docket 13-0077. The Utilities' overriding goal has always been to achieve the Section 8-104 goals at the lowest cost possible. Even with goals that are constrained by the funding cap, the Utilities still strive to design and implement programs with low free ridership, thus increasing the savings attributable to the investment made by its ratepayers.

Q. Does your plan continue to support OBF?

A. Yes. We have been supporting OBF since it was initially established. With the most current changes expanding eligibility of measures and participants for OBF, we believe usage of this tool will increase and will result in more participants being able to afford installation of energy efficiency measures.

Q. Does this conclude your direct testimony?

A. Yes.