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VIA FEDEX

Honorable Jaclyn A. Brilling
Secretary
New York State Public Service Commission
Three Empire State Plaza
Albany, New York 12223

2008 SEP 23 AM 9:37

Re: Case 07-M-0548-Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard

Dear Secretary Brilling:

On June 23, 2008 the Commission issued an order seeking independent program administrators looking to further expand the range of programs, and seeking to encourage innovation, to submit proposals to the Commission no later than 90 days from the issuance of the Order.

CPower hereby submits the attached independent program proposal and seeks to become an independent program administrator based upon the proposal. CPower would like to thank the Commission in advance for the opportunity to submit our independent program.

Sincerely,

/s/ B. Marie Pieniazek

Senior Director
Market & Program Development, Northeast
CPower

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Case No. 07-M-0548-Proceeding on Motion of the Commission Regarding an Energy Efficiency Portfolio Standard

Program Submission Concept
CPower, Inc. (formerly ConsumerPowerline)

September 22, 2008

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I. INTRODUCTION

CPower, Inc., formerly ConsumerPowerline, is a full service strategic energy asset management firm and a leading provider of demand response solutions in the United States, with more than 2,000 MWs under management. We currently operate in North America's largest energy markets including New York, California, New England, Mid-Atlantic, Texas and Ontario.

CPower is a recognized leader in structured free wholesale markets, providing both economic and reliability resources to wholesale markets. CPower's current portfolio of customers includes a wide range of resources, including large industrial loads, institutional customers, and commercial and residential consumers.

II. PROGRAM OVERVIEW

CPower submitted a methodology for developing and operating its program on August 7th, 2008, to all active parties, and invited comment (Appendix A). The feedback CPower received underscored the importance of such a market approach, but criticized CPower's proposal in that it did not provide a clear pilot program, with a specific budget, that would offer the Commission a tangible parallel market with a program administrator.

CPower believes that the current state of affairs (with utilities and the New York State Energy Research and Development Agency issuing sole- and limited-source contracts that are not transparent with respect to terms and price) creates an unlevel playing field that will seriously harm the market and hamper success by stifling competition. In addition, CPower believes that the current system could result in an erosion of jobs in the industry due to multiple business failures, and reduced payments to end-users, as a result of monopoly power. CPower believes that this system should be replaced by an open, objective, transparent opportunity for all end-users and for all qualified private-industry participants to pay their clientele the same amount for energy efficiencies.

Therefore, CPower is offering a pilot program to help fill the gap between the megawatt hour reductions that could be expected with "business as usual" approaches and the state goal of 15% reductions by 2015. We expect to achieve annual reductions of MWh's annually, by 2011 at a benefit to Total Resource Cost of 3.0[1] or greater. All reductions will be measured and funded:

1. ***Objectively, with clear metrics***
2. ***Transparently, with clear and simple definitions of what measures qualify and how***
3. ***Equal pay for equal reductions, and***
4. ***Open access to all businesses and residents***

The proposed pilot is designed to mitigate the market harm that comes when several providers compete to get more money from the rate base by seeking approval from the Commission for more and more expensive energy-efficiency programs. Such a market creates a race in which ratepayers are confused, early entrants who contract at reduced rates fail to achieve their targets, as does the market as a whole.

Therefore, this proposal outlines processes and measurement and verification standards that CPower will implement. These processes are intended as well to be transparent and objective, such that, in theory, alternative providers could, themselves, use them, as guides to themselves propose to the Commission for approval to act as administrators. This objectivity and transparency makes certain that no unfair market practices will ensue, that threaten the viability of competitive energy markets. In order to ensure end-users who install energy efficiency measures that they are getting paid fairly, and to simulate the dutch auction structure that economists recognize as essential for building a market, this proposal outlines a fair and open price for energy efficiency that will be adjusted upward, in the event that a state agency or a rate-base funded rebate is established that pays more for essentially the same efficiency measure.

CPower has outlined measurement and verification standards that are representative of what the industry has delineated as fair assessments of energy-efficiency achieved through a particular measure. We recognize that there is a stakeholder process to better hone these metrics and to

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[1] TRC for each measure is outline in Appendix B attached; methodology for calculating TRC is outlined in August 7, 2008 paper (Appendix A)

clarify net- to gross issues by measure, and/or by rate class. In the coming months, we will submit modifications to incorporate agreed-upon standards to ensure that spillover and surplus are quantified, and accounted for, in a manner that this pilot maintains a 3.0 benefit to total cost ratio.

III. PILOT PROGRAMS

A. LIGHTING

Budget, Target MW's, Timetable & Contribution to address the gap:

Lighting	MWh achieved	% of MWh goal	$/MWh	total value	ratio	price cap	budget
2009	75,000	15%	$147.19	$11,038,917.21	3.0	$ 49.06	$ 3,679,639.07
2010	200,000	20%	$145.93	$29,185,424.27	3.0	$ 48.64	$ 9,728,474.76

CPower seeks to establish a goal of 200,000 MWh's in annual energy efficiency through Commercial, Industrial and Institutional lighting retro fits, by 2011. A comprehensive lighting improvement shall include replacing lamps/ballasts, replacing existing fixtures with new fixtures, retrofitting fixtures and system redesign to lower wattage use. Retrofitting fixtures may include remounting lamps to improve fixture efficacy and system redesign may include new fixture types and improved grid layout.

A "line by line" energy audit will identify the number of existing fixtures, the location of the fixtures, lamp ballast configuration and wattage by fixture type. An existing wattage table acceptable to Commission will be utilized (NYSERDA Wattage table is an acceptable standard) to derive the existing kW of the system. The equipment and line by line audit are subject to inspection and certification by the customer, by CPower, and by the Commission. CPower intends to employ neutral third-party inspection and certification contractors. It is likely that the firm will seek to harmonize standards with other program administrators, such as NYSERDA, or to work with these other entities' contractors to unify the process.

The wattage after the lighting improvements are installed is based on the "as built line by line" and compares the existing fixture wattage to the installed fixture wattage in each location, by line item. The wattage is also based on an acceptable wattage table. The installed equipment

is again subject to inspection and certification by the customer, by CPower, and by the Commission.

The life of lighting improvements can be assumed to be the life of new lighting fixtures, whether new or retrofitted. This anticipates that replacement by new technology does not become economically advantageous and that lamps and ballasts are replaced with appropriate and equally efficient models. For the purpose of this proposed program, we estimate the useful life of Lighting Improvements to be 10 years, although the actual useful life will be longer.

Methodology for Capturing Savings: The program was developed in accordance with the above general approach. An on-site fixture and space audit performed in coordination with the facility user quantified the project. That effort also optimized lighting quality for the applied application.

CPower will utilize a standard approved wattage table for retrofit applications and the installed equipment will be subject to pre-approval, inspection and certification by the customer, by CPower, and by the Commission.

The following describes our approach and methodology with specific examples for capturing and delivering energy reduction savings that will seeks to assist the Commission in meeting their 15 x 15 energy savings goal. This approach will also assist in deferring capital investment of transmission and distribution, create related energy, and will provide cost savings for customers. The procedures described below will satisfy the combined goal to deliver energy efficiency savings, provide owners with desired facility upgrades and create the best overall value.

The following general procedure will be aligned with the individual account needs and formally executed in accordance with proposed program:

1. Data Collection – Assemble facility specific information, such as:
    a. Contact information for ownership and operations staff
    b. Building(s) size and configuration(s)
    c. Use and operating hours
    d. Utilities consumed with providers and account numbers

e. General building systems and infrastructure

2. Facility Visit – Perform initial site visit, interview operations staff and ascertain the following information:
   a. Document method of building operation and hours of operation
   b. Obtain historic utility consumption through utility bills or utility-provided electronic data
   c. Identify critical service requirements and integrity needs
   d. Identify building systems and processes responsible for daily consumption of utilities along with operating parameters (i.e. set points, loading, schedules, etc.)
   e. Catalog operating equipment serving these systems, including manufacturer, model, age, fuel source (electric, gas, oil, steam, etc.), capacity, operating parameters (temperatures, flows, method of modulation, minimum and maximum loading, etc.), age and suitability for continued service
   f. Assess existing emergency life safety and supplemental onsite generation for total capacity and operational constraints
   g. Specifically ascertain from facility staff pending, planned or desired efficiency measures and system upgrades

3. Qualification – Assemble a pre-schematic design in diagrammatic and descriptive form for potential lighting measures that will identify installation constraints, determine operational requirements and illustrate implementation scope. Discuss viability with facility staff. (Detailed audits for lighting and controls and similar opportunities may be applicable at this stage.)

4. Project Quantification – Assemble spreadsheet-based energy calculations for viable measures using facility operating hours, systems parameters and loading, published local annual weather date, utility tariffs to determine demand reduction

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and energy savings. Create conceptual scope of work and preliminary costs required for implementation of each measure. Generate pro forma that illustrates return on investment.

5. Due Diligence – Meet with facility staff to confirm potential measures for viability. The review shall refine parameters, identify constraints and determine applicability. Viable measures will be combined into an overall program that will reflect specific revisions per the review process.

6. Program Optimization and Approval – Refine and revise program through field measurements, engineering and incorporate committed costs and incentives. Determine and gain acceptance of savings verification method in accordance with accepted protocol. Obtain approval to proceed from governing authorities.

7. Implement Measures – Execute measures in accordance with customer constraints and coordinate with the outlined requirements, as well as any additional requirements the Commission implements.

8. Monitoring and Reporting – Verify savings in accordance with accepted methods and coordinate fulfillment of contract and incentive commitments. Provide follow up reporting per Commission on a monthly schedule, to be delivered on the first of each month.

9. Certifying Contractor Practices – CPower will either perform the work directly or it will certify independent parties to do so. Certified independent parties will, themselves, need to present an affidavit that all work was completed according to the highest professional standards and that all statements related to estimation and installation are correct, to the best of their knowledge. Certification will include training for the independent parties conducting the work and random sampling of

the work that contractors certify. Any contractor who has submitted an inaccurate certification is to be subject to suspension or revision of the certification license.

B. RETRO and CONTINUOUS COMMISSIONING

Budget, Target MW's, Timetable & Contribution to address the gap:

CCX	MWh achieved	% of MWh goal	$/MWh	total value	ratio	price cap	budget
2009	30,000	6%	$321.02	$ 9,630,678.68	4.0	$ 80.26	$ 2,407,669.67
2010	40,000	4%	$331.75	$13,269,924.88	4.0	$ 82.94	$ 3,317,481.22

The Objective of Retro-commissioning RCx is to "produce a permanent improvement in the on-going operation and management of buildings." This is an ongoing process of making sure at a later date that buildings operate with a level off efficiency and comfort to ensure optimal productivity at minimal impact. The commissioning process can be applied to existing buildings that have never been commissioned to restore them to optimal performance. Retro-commissioning (RCx) is a systematic, documented process that identifies low-cost operational and maintenance improvements in existing buildings and brings the buildings up to the design intentions of its current usage

RCx typically focuses on energy-using equipment such as mechanical equipment, lighting and related controls and usually optimizes existing system performance, rather than relying on major equipment replacement, typically resulting in improved indoor air quality, comfort, controls, energy and resource efficiency.

RCx typically includes an audit of the entire building including a study of past utility bills, interviews with facility personnel. Then diagnostic monitoring and functional tests of building systems are executed and analyzed. Building systems are retested and re monitored to fine-tune improvements. This process helps find and repair operational problems. The identification of more complex problems is presented to the owner as well. A final report, recommissioning plan and schedule are then given to the owner.

Retro-commissioning is the application of the commissioning process to existing buildings. Retro-commissioning is a process that seeks to improve how building equipment and

systems function together. Depending on the age of the building, retro-commissioning can often resolve problems that occurred during design or construction, or address problems that have developed throughout the building's life. In all, retro-commissioning improves a building's operations and maintenance (O&M) procedures to enhance overall building performance.

All forms of building commissioning share the same goals: to produce a building that meets the unique needs of its owner and occupants, operates as efficiently as possible, provides a safe, comfortable work environment, and is operated and maintained by a well-trained staff or service contractor.

Why is retro-commissioning important?

Commercial buildings frequently undergo operational and occupancy changes that challenge the mechanical, electrical and controls systems, hindering optimal performance. Additionally, in today's complex buildings, systems are highly interactive with sophisticated control systems that can create a trickle-down effect on building operations – small problems have big effects on performance.

Unfortunately, most buildings have never gone through any type of commissioning process, and even well-constructed buildings experience performance degradation over time. No matter how well building operators and service contractors maintain equipment, if it operates inefficiently or more often than needed, energy waste and reliability problems can occur.

What are the benefits of retro-commissioning?

Everyone benefits from retro-commissioning. For owners, retro-commissioning reduces building operating costs that can lead to an increase in net operating income. Building managers notice fewer occupant complaints and increased ability to manage systems. Building staff receive training and improved documentation, and building occupants are more comfortable.

Cost Saving

Retro-commissioning can produce significant cost savings in existing buildings. Savings vary depending on the building type, its location, and the scope of the retro-commissioning process. A

comprehensive study[2] found average cost savings in the following ranges:

Description	Range of Values
Value of Energy Savings	$0.11 - $0.72/sq ft
Value of Non-Energy Savings	$0.10 - $0.45/sq ft

The many documented benefits resulting from retro-commissioning include:

- Improved system operation: beyond preventive maintenance
- Improved equipment performance
- Increased O&M Staff Capabilities and Expertise
- Increased asset value
- Energy savings
- Improved Occupant Comfort
- Improved indoor environmental quality (IEQ)
- Improved building documentation

The Retro-commissioning Process

A well-planned and executed retro-commissioning project typically occurs in four distinct phases: *Planning, Investigation, Implementation, and Hand-Off.*

[2] Mills, E., H. Friedman, T. Powell, N. Bourassa, D. Claridge, T. Haasl, and M.A. Piette. 2004. "The Cost-Effectiveness of Commercial-Buildings Commissioning," Lawrence Berkeley National Laboratory. http://eetd.lbl.gov/EMills/PUBS/Cx-Costs-Benefits.html

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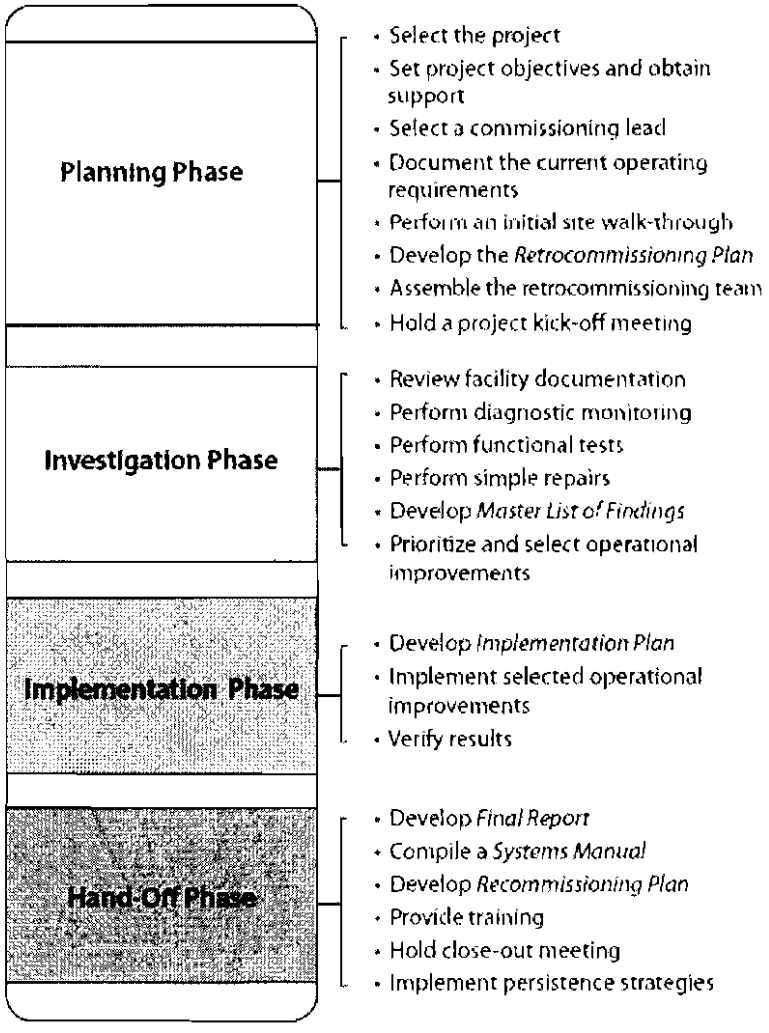
Retrocommissioning Process Overview



Continuous Commissioning

Continuous Commissioning is simply retro-commissioning, maintained over time. There is a great need to leverage the increased utilization of real-time metering and the increased penetration of demand response resources to produce incremental and permanent energy efficiency. There is a relationship between demand response (DR) and energy efficiency derived from Continuous Commissioning because ISO demand response programs require the installation of the interval metering that is required to implement Continuous Commissioning.

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The advanced meters required by DR program rules allow for a continuous record of load and energy consumption on a near-real-time basis. This data is analyzed electronically or manually, using software that identifies usage trends. ESCOs can then identify opportunities for ongoing energy efficiency savings that might otherwise go unnoticed. Further, these efficiencies are often very low cost opportunities, as they can be effectuated with simple operational shifts or minor changes in settings in building management systems.

Continuous Commissioning uses remote energy consumption metering with trend log ability to identify previously unrecognized inefficiencies in operating systems, document energy savings due to operational improvements, enable diagnostic procedures, and ensure persistence of reductions through ongoing re-commissioning. Continuous Commissioning differs from commissioning a system when it is first installed and from re-commissioning later, in that it requires continuous monitoring, assessment and adjustment in maintain persistence. Yet, due to this continuous attention and improvement, these measures are likely as permanent as alternative energy efficiency measures, and sometimes increase over time as end-users see what can be done with comfort.

Target

CPower seeks to establish a goal of 40,000 MWh's in annual energy efficiency through Continuous Commissioning as a permanent energy measure under our proposal, by mid-2010. Through leveraging existing and incremental demand response customers CPOWER will achieve significant and permanent low cost energy savings in the projected amount of $5 million, annually. Adopting Continuous Commissioning into the 15 x 15 goals will not only provide energy efficiency savings but will seek to enhance demand response participation, and supports advance metering in New York. Expected benefits from Retro- and Continuous Commissioning are projected to range from 5% to 10% in energy savings, on a sustainable basis, in client sites.

The Continuous Commissioning ® **Process**

It's an ongoing process (*not* an annual checkup) for monitoring systems, diagnosing and resolving issues, and making energy consumption as efficient as possible while maintaining or improving building comfort. It includes anything from physical maintenance, to control strategies, to prioritizing and implementing retrofits.

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While other forms of commissioning on existing buildings have initial design specifications as their goal, continuous commissioning seeks to optimize the current operations—how the building is occupied and used today accounting for changes since the original design.

Engineers find opportunities to make the building work better using minor system hardware changes, and by enhaneing the building design and operation. For instance, designers typically put in "safety factors" that result in higher energy usage because oversized systems run at reduced part load. It is not uncommon to find systems operating at 30 to 50% oversized. Hence continuous commissioning helps in right sizing the systems where applicable.

Figure below shows the key steps in the Continuous Commissioning® process.

The CC® Assessment of Step 1 uses a visit that involves site staff and site measured data to develop a price proposal that identifies and quantifies potential measures and savings. It also identifies any additional energy monitoring that may be needed. Step 2 consists of developing and approval of a continuous commissioning plan. Upon approval to precede Step 3 of CC the provider develops performance baselines for energy and comfort. Step 4 includes examining the building in detail to diagnose operating and comfort problems in the building, identifying specific component failures or degradation, and diagnosing specific causes of system inefficiency down to the AHU and/or terminal box level. The maintenance measures, control changes, balancing changes, or minor equipment improvements needed to improve efficiency are efficiently identified and prioritized. This step involves identification of changes needed to operate the mechanical equipment for optimum efficiency for the actual building use. This fundamentally differs from the traditional commissioning approach that focuses on bringing the building to design conditions that are usually over-designed and often rather different from actual use, resulting in built-in inefficiencies.

Step 5 involves implementing CC® measures, after discussing them with the building staff, and changing the measures as needed to fit the measures to staff expectations. The CC® engineers then work closely with the staff to implement the approved changes, and further fine tune the changes during implementation. Again, this fundamentally differs from retro-

commissioning projects that deliver a report to the owner who has staff or a contractor implement the measures. The CC® engineers have the knowledge required to fine tune the measures and often double the savings obtained when others implement the changes. This tunes the equipment to deliver comfort with much improved savings. An important feature of Step 5 is that the building staff is deeply involved in the CC® process.

Finally, Steps 6 and 7 include documenting the changes in operating procedures for the staff as well as the energy savings and comfort improvements. Ongoing tracking of energy and comfort performance is essential to maintain the integrity of the energy savings. Experience has shown system components often fail or degrade in ways that increase operating cost by $0.50/sq.ft.-year. These losses usually go unnoticed since the controls compensate by using substantially more energy to sustain comfort set points. A dedicated CC® monitoring and analysis staff with software tools will identify degradation in savings more efficiently than a group for whom this is just one of their many responsibilities. This investment assures the long term survivability of the savings.

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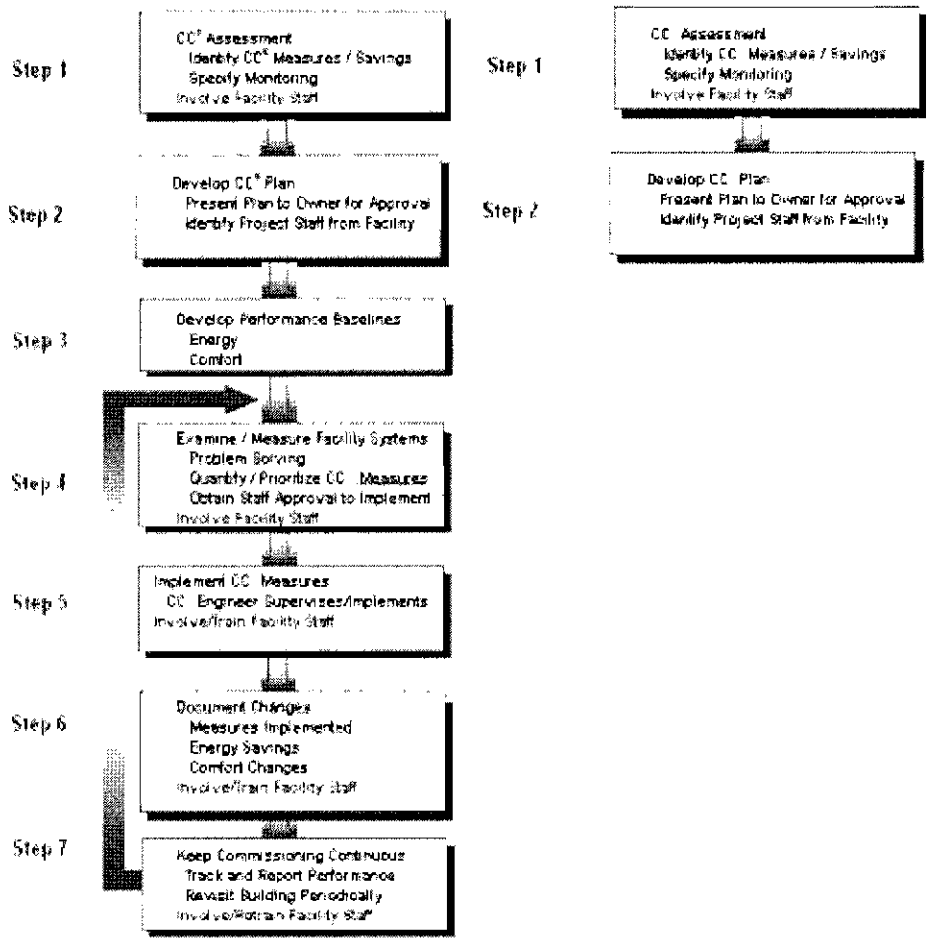

Figure 2. The Continuous Commissioning® Process.

Despite the clear and delineated processes, and the clear measurement and verification that will verify efficiency achieved through retro- and continuous commissioning, the measurement plans must be customized because the number of mWh's achieved in each facility is an art. Many software providers have built Continuous Commissioning algorithms, and many engineering firms retain practices in it. This is the most critical measure to open up to all certified providers in that sole-sourcing the rebates for such services would deny many the access to their own clientele.

Pilot Start and End Dates

The pilot will start in January, 2009, and continue through December, 2010. As the Benefit to Total Resource Cost ratio, and therefore the payments are calculated (reduced) assuming that they continue for the persistence of the measures, CPower expects that, with success, the payments will continue thereafter, in the event the pilot is continued.

C. COMBINED HEAT AND POWER (CHP)

Combined Heat and Power (CHP) plants provide benefits to the electric system with respect to avoided build, avoided stress on the electric grid, additional efficiencies in utilization of fossil fuels, enhanced reliability, reduced emissions, additional efficiencies with respect to line loss, and enhanced national security due to distribution of resources. The current rebate environment for CHP offers no sustained benefit to offset stand-by charges for those who install larger systems, and quite extensive restriction with respect to exemptions from stand-by charges. Further, the New York Independent System Operator has determined in its Special Case Resources manual that CHP that operates at system peak and sells into Special Case Resource markets must have its capacity obligation grossed up to compensate, therefore negating the effect of the sale. Akin to energy efficiency, while the CHP does save some money for the end-user who installs the unit, many of the above social benefits cannot be monetized by the site owner. Unlike energy-efficiency, paybacks for CHP tend to be longer. CHP in the commercial, institutional residential and industrial sectors holds the potential to significantly narrow the gap between 2015 goals and projections of what we are expected to achieve in the base case. Without a unified benefit for the technology, we will not implement substantial CHP, over the next several years.

CPower's objective in offering the programs is to provide a level playing field for Combined Heat and Power in order to upgrade our infrastructure, further distribute supply, and avoid unnecessary build of transmission and distribution that's substantially funded by the rate

base. CPower has proposed an incentive cash flow that achieves a benefit to cost ratio of 2.5 for the operating years of a CHP.

In the 2009 – 2010 pilot period, CPower targets 200,000 MWh's of CHP to be achieved in 2009, and an annual CHP of 300,000 MWh's of CHP to be commissioned and operating by 2011. CPower considers these goals conservative as the firm has already identified a portion of this resource (see Appendix C).[3]

1. Standards

CHP systems that achieve average annual fuel-conversion efficiency of 67 percent will be eligible to receive incentives, where 'efficiency' is defined as "the sum of the total useful electrical and thermal energy output divided by total operational electrical and fuel energy input." Output that is "useful" is equivalent to output that is used in a "productive and beneficial manner" for purposes of section 210(n)(1)(A)(i) of the Public Utility Regulatory Policies Act, as interpreted and applied by the Federal Energy Regulatory Commission.[4] Annual fuel-conversion efficiency and percentages of electricity and thermal energy production will be assessed quarterly for the preceding four quarters, starting on the anniversary of initial certification. After the first year, compliance with the Commission's efficiency and production percentage requirements must be demonstrated each quarter as a prerequisite for qualification of incentives for the following quarter. Further data reporting will include electric inputs of kW at system peak and kWh in intervals of <15 minutes.

2. Metering

Electrical input to and output from a CHP facility will be measured with an appropriate watt-hour (Wh) meter or sub-meter, in accordance with Commission Metering and Telemetering Criteria which is consistent with "Revenue-grade metering." Non-electrical energy flows will be metered consistent with American

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4 See, FERC Docket No. RM05-36-000; Order No. 671, "Revised Regulations Governing Small Power Production and Cogeneration Facilities", p. 17-26.

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Society of Mechanical Engineers (ASME) 3M or other appropriate prevailing standard(s) as approved by the Commission for measuring flow of materials; where direct metering is impractical, non-electrical energy flows will be determined using indirect measurement of appropriate parameters and calculation methods consistent with customary and responsible engineering practice. Aggregate data for the pilot will be provided to all market participants who request it. Specific customer data will remain private and segregated, as is CPower's process in its data systems approved by the NYISO, ISONE, PJM Interconnect, ERCOT, the CUC, MISO, and in Ontario.

CPower's Remote Operation Center ("ROC") is responsible for all data collection, calculations, monitoring, registration, auditing, maintenance, and collection. The ROC is located in North Adams, MA, segregated from CPower sales and marketing operations.

10. Pilot Duration

All facilities commissioned and operating at capacity, on or after August 7th, 2008 will be deemed eligible for incentives, through 12/31/2010. Continuation of the pilot would then continue facilities' eligibility for incentives through ten years from the date of commissioning, or through the close of the program, whichever comes first.

11. Program Evaluation

Failure to achieve registration of the target MWh's of CHP will be deemed as program failure. Evaluation, with respect to the useful energy output of the facilities, as well as of efficiency of inputs versus output will be performed by a neutral third-party Professional Engineer. The transparency and the objectivity of the process, as well as the certainty that the incentives received are equal to what can be received elsewhere, permits any qualified CHP installation to itself apply for Commission qualification and ensures that no delay in project decision-making will occur, due to some doubt that incentives will be available or that the offer will be superceded by some alternative incentive offer yet to come.

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Budget, Target MW's, Timetable & Contribution to address the gap:

Cogen/CHP	MWh achieved	% of MWh goal	$/MWh	total value	ratio	price cap	budget
2009	175,000	15%	$ 135.59	$ 23,728,607.71	2.5	$ 54.24	$ 9,491,443.09
2010	200,000	20%	$ 133.94	$ 26,788,358.11	2.5	$ 53.58	$ 10,715,343.24

CPower intends to employ neutral third-party evaluation at a total cost of 5% of the budget. Evaluators will be submitted to the Commission for approval; it is likely that the firm will seek to employ either NYSERDA, in the evaluation, or to work with NYSERDA contractors to unify the evaluation process.

D. RESIDENTIAL ENERGY EFFICIENCY

Residential energy efficiency initiatives are critical to:

1. Success of the 15 by 15 initiative, as residential consumption represents roughly one-third of all electricity consumed.
2. Equity, with respect to low-income participation, as well as broad participation in energy-reduction initiatives.

However, measurement and verification of residential initiatives is expensive per unit of energy efficiency identified. Surplus, and free-ridership contributions are difficult to quantify. Claims related to the impact of consumer-awareness, shelf-space, and, therefore to the contribution of programs that involve payments for marketing and advertising are open to question. Applying these claims to the calculation of particular benefit to cost ratios in a particular program creates market harm, in that that claim is not verifiable.

Therefore, standards that are objective and open to all participants are critical to supporting the residential energy-efficiency industry. The point-of-sale marketing and financing that comes with a retailer simply securitizing an incentive will, we believe,

reduce the need for marketing dollars spent elsewhere through rate-base financing, if it does not eliminate the need altogether. Marketing costs are borne by those who distribute the equipment that achieves the energy efficiency—more effective marketing is simply a cost of doing business in an open and transparent marketplace.

CPower's measurement and verification protocols for residential energy-efficiency are drawn from industry standards, recognized elsewhere. As with other measures, as the New York stakeholder process settles on verifiable standards for quantifying energy efficiency in residential facilities, we will harmonize standards and re-submit to the Commission

There are six categories of residential efficiency measures that we intend to incorporate into the overall proposed structure. Measurement and verification standards and algorithms are outline in attached Appendix D (category in bold and related measure below):

Residential Appliances

CLOTHES WASHER
DISHWASHER
REFRIGERATOR
REFRIGERATOR RETIREMENT
FREEZER
DEHUMIDIFIER RETIREMENT
DEHUMIDIFIER

Residential Buildings – Lighting

CFL LIGHT BULB (DIRECT INSTALL
CFL FXTURES (NEW HOMES)
CFL BULBS (RETAIL)
PORTABLE LAMPS
TORCHIERE
FIXTURE (HARD WIRED)
CEILING FAN & LIGHTS

Residential Buildings - New Shell Improvements

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HIGH PERFORMANCE WALL INSULATION
HIGH PERFORMANCE CEILING INSULATION
INSTALL CEILING INSULATION
INSTALL WALL INSULATION

Residential Water Heaters

WATER HEATER THERMOSTAT SETTING
WATER HEATER WRAP
LOW FLOW SHOWERHEAD

Residential Buildings - Shell Retrofits

HIGH PERFORMANCE WALL INSULATION
HIGH PERFORMANCE CEILING INSULATION
INSTALL CEILING INSULATION
INSTALL WALL INSULATION

Residential Buildings - HVAC Equipment Efficiency

SEER 14 MIN AC
AC SYS TUNE-UP
HEAT PUMP
GEOTHERMAL HEAT PUMP
PUMP - DUCTLESS
ROOM WINDOW AIR CONDITIONER
DUCT SEALING
ROOM AC RETIREMENT

Budget, Target MW's, Timetable & Contribution to address the gap:

Residential	MWh achieved	% of MWh goal	$/MWh	total value	ratio	price cap	budget
2009	250,000	49%	$ 395.04	$ 98,761,015.02	3.5	$ 112.87	$ 28,217,432.86
2010	300,000	30%	$ 295.92	$ 88,776,439.44	3.5	$ 84.55	$ 25,364,696.98

In offering these programs, CPower aims to provide for the inclusion, not only of homeowners, but also of retail outlets in the state's energy efficiency program. By allowing consumers to register their credits at the point of sale, there is improved transparency in the

benefits of purchasing energy efficient products, and therefore greater incentive to purchase such products. The implementation process will be relatively painless once the structure is approved by the Commission. Ultimately, it would come down to quantifying the eligible savings from each available purchase, and communicating all that is necessary, about that measure to the Certification and Tracking entities and system, respectively, and storing the required affidavits and customer contracts in a database of end-users and measures.

Savings will be calculated using methods from the attached appendix, leaving several parameters to be entered at the point-of-sale. Such parameters will include the type of measure, the ZIP code of installation, and other measure-specific variables (i.e. for light bulbs: wattage, where and in what type of facility it is being installed).

Once eligibility is determined, end-users will have their products registered for credits at the sales counter itself. Such a process would apply to residential consumers as well as builders/contractors. In the latter case, deemed savings will be calculated from baselines with the contractors being asked to certify what was installed, and with CPower auditors conducting random visits to a statistically sampled subset of contractors' work, to ensure against fraud. Auditors will have the authority to suspend or revoke a contractor's license to self-certify.

In instances where prescribed calculations will not be suitable, custom measure calculations and accompanying M&V plans will be submitted to a neutral third-party Professional Engineers for certification through direct evaluation of larger projects on one site and through random statistical visits for multi-site, smaller projects.

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MWh projected to be saved by each individual residential measure and the TRC for each measure is outline in Appendix E. Methodology for TRC calculations are outlined in the August 7, 2008 paper (Appendix A).

Evaluation

CPower intends to employ neutral third-party evaluation at a total cost of 5% of the budget. Evaluators will be submitted to the Commission for approval; it is likely that the firm will seek to employ either NYSERDA, in the evaluation, or to work with NYSERDA contractors to unify the evaluation process.

IV. CONCLUSION

CPower respectfully request that the Commission select and fund our independent program as outlined in the above submittal. CPower seeks approval of our outlined energy efficiency programs and looks forward to working with the Commission should the Commission seek to implement the proposed programs. Please feel free to contact CPower with any questions, or if clarification is needed on any of the proposed energy efficiency proposed within this filing.

Respectfully submitted,

/s/ B. Marie Pieniazek

Marie Pieniazek
Senior Director, Market & Program Development, Northeast
CPower

An Opportunity in Time

Executive Summary

With this submission, we seek to design a four-year government structured market in energy efficiency that will co-exist and integrate with "Fast-Track" and "Expedited" program funding in the near-term then smoothly transition to a free market, as soon as these programs expire in 2012.

We have developed a preliminary structure for an energy efficiency "cap and trade" marketplace that will be built upon standardized "units" of energy reduction. Over the next 45 days, we would deeply appreciate further comment on our proposal, from any and all interested parties.

Need

The need for stark action is clear, yet the environment for such action could not be more difficult. The New York State Public Service Commission ("PSC") has focused on aggressive energy efficiency outcomes in Proceeding 07-M-0548, over the near-term. We aim to improve energy efficiency by 15% by 2015. We estimate that improving efficiency require a transfer of resources of roughly $4.6 billion in that year.

This call for action comes amidst a more general call: regionally, nationally and globally. Lieberman-Warner debate focused on outcomes that, were we to maintain current growth trajectories, would require 90% reductions in energy intensity by the middle of the century. Our dependence on fossil-fuel imports is generally spot-lit as the key national security challenge we face. Internationally, nations have not yet settled on a replacement accord for the Kyoto Protocol, as emerging growth markets seem poised to blacken the skies, simply through additions of minimal incremental infrastructure per capita, applied toward several billion people.

Are we maintaining our competitive advantages? Our current growth trajectories, 3%, by the most generous metrics, pale in comparison with those of China and India, in particular, and our currency is barely treading water in the face of half-trillion dollar annual deficits.

Regionally, most Mid-Atlantic and New England States have entered into the Regional Greenhouse Gas Initiative (" RGGI"). RGGI states will hold carbon emission permit auctions in late 2008 as well as quarterly, throughout 2009. In New York State alone, these auctions are expected to yield more than $500 million annually, offering not simply dollars for the systems benefit fund, but the equivalent of a carbon tax on emitters that many feel will clear at more than $8 per ton.

Our prospectively expensive calls for action could not come at a worse moment in many people's lives. We're lacking jobs, and losing asset value in our homes and in our stock portfolios.

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We see this as a moment though, in which our two problems: economic uncertainty and environmental unease, are each the solution: one for the other.

As we have thought through the elements of what aims to be an "optimally designed" energy efficiency market we have sought to consider each key constituency, and design in a manner that will maximize efficiency benefits for most, today as we seek to address the fears of others.

The Proposed Program

A verifiably avoided consumption of a gigajoule (GJ), or one billion avoided Watt Seconds of electric use, is the measure we use in this paper. Other compliance markets that are similarly structured, such as those in Connecticut, use a megawatt hour as their basic "White Certificate" unit. We have chosen the gigajoule because we are hopeful that New York State will simply harmonize the trading of electric reduction assets, with other fossil fuel "offset" assets, that are apt to be funded through some portion of the RGGI auctions. We estimate that concomitant RGGI reductions, to those envisioned in electric markets, would pay and cost more: roughly $10.3 billion in 2015[1].

Harmony in market structures creates the potential for great synergies, as we seek "depth of savings." It will allow us to speak consistently to end-users regarding their challenges. We'll talk of electric reduction and management, natural gas and heating oil reductions, steam management opportunities, and even such measures as offset earnings from fuel-efficient automobiles. These can be integrated into the same program design.

We have used compliance market cap and trade structures because we believe such structures achieve two critical outcomes:

1. They provide extraordinary benefit today, to those who will gain from future energy efficiency economies. These individuals and technologies will therefore, grow in social, economic and political clout, sooner, ensuring that we sustain our efforts to achieve our goals and

1 2015 estimates of a 15% reduction, at the equivalent EEPS price, outlined in NGRI Appendix. This Appendix also makes it clear that we estimate little or no fossil fuel reductions, by 2015, in the event of no fossil fuel offset markets.

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2. Such market structures are best equipped to scale, in that those who benefit today will be those with the passion and capability to build the better energy-efficiency mousetrap, tomorrow.

In this paper, the energy efficiency "cap and trade" market-place, seeks to address the critical barriers that hinder our short- and long-term objectives. We are hopeful that the paper will serve as a forum for other stakeholders to weigh in with objections, concerns, support, or simple commentary, over the 45 days that follow this submission.

To achieve "15 by 15," we'll need to reduce consumption by roughly 25 million megawatt hours per year, by 2015.

We propose the state build a registry of such certified reductions, by January 1st, 2009. NYSERDA would, we believe, be the best party to competitively bid provision of registry software. Moreover, a key aspect of our proposal would be the development and publication by NYSERDA of a comprehensive and transparent "catalogue" of approved energy efficiency measures that would give rise to GJ's and a comprehensive and transparent set of procedures for measurement and verification (including provisions for "deemed savings" applicable to certain measures).

Early market budgets conform roughly to Fast Track program budgets. Step I would simply require NYSERDA and Utility DSM programs to certify all of their MWh reductions through transparent and standardized M&V processes, collectively built out over the next two months. Regardless of whether the reduction was generated or represented by NYSERDA, a Utility, a 3rd party service provider or an end-user, any entity wishing to receive external validation of their reductions and the opportunity to sell these reductions in the market, will vet their reductions through the same set of M&V requirements and calculation methodologies.

Any end-user can qualify for a GJ. (S)he qualifies by installing some energy-efficiency, in any location at which (s)he pays the electric bill.

That same owner of a GJ can sell privately to any buyer or (s)he can sell it through a "Dutch Auction" trading market that we propose also be administered by NYSERDA. The request for registry software would also include open access to remote registry services. Since anyone achieving energy efficiency could acquire and sell a GJ, natural service providers would be convenient local outlets, connected to NYSERDA's central registry, such as a supermarkets, gas stations, or hardware stores.

The Dutch Auction works as follows: The New York State Energy Research and Development Agency verifies and registers every GJ as "eligible for sale." Starting in 2009, the agency will

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seek to procure 14.366 million GJ's in an auction. Each year, the agency will seek to procure more, mirroring expected outcomes through 2015:

Table A[2]:

	GJ's
2008	2,843,226.00
2009	14,366,437.20
2010	26,145,961.20
2011	38,270,098.80
2012	50,696,870.40
2013	63,387,874.80
2014	76,398,325.20
2015	89,737,351.20

If fewer GJ's are offered for sale than NYSERDA seeks to procure, 100% of those offered for sale will be purchased by NYSERDA at a "**cap price**" (see below).

Our expectations are, at first, more modest than our goals, so in early years, we expect supply of certificates to fall short of set demand, and in these years we do expect that the price for certificates will clear at the capped price in each auction.

If, as we project is likely in later years, more GJ's are offered for sale than NYSERDA is authorized to procure, one of three approaches will work:

1. NYSERDA and the private sector buy down the excess, for some price less than the cap price, and the market continues to clear at its cap,
2. Stakeholders agree to raise authorized procurement numbers or
3. A private buy/sell market is created. Such a market could mirror the Connecticut Efficiency Portfolio Market structure, referenced earlier. This market is working quite

2 This is a simplification: each ISO Zone would have its own procurement target.

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well[3]. This "Compliance-Market" could prospectively transfer auction administration to the New York Independent System Operator. In compliance markets, any buyer of electricity who intends to resell that electricity (e.g. an electric utility or an electric marketer, such as Constellation, Sempra, etc.) is required to buy a certain number of Certificates that represent energy efficiencies achieved by end-users. The number that the electricity marketer is required to buy depends on how much electric that marketer actually sells to its customers.

Economic System Benefits & Evaluation Plan

As a "free-market" provider, operating in a mix of competitive environments, we see starkly, the impact of government strategies in seeking to face the efficiency challenge.

Funded government support for energy efficiencies is always a well-intended effort to support our efforts and our markets. Yet, this support often creates barriers, not only to individual businesses, but to the success of the market as a whole. This intervention can be the central reason that a market fails to achieve its objectives.

As we structure our proposed intervention, we feel that it's important to recognize one limitation on all interventions:

We can only provide an **objective** number of government **dollars** or require an **objective outcome**. The "or" is our operative term. **Either** we

- **a.** set an outcome that seems achievable, and allow the total social cost of the program to float where it will, **or**
- **b.** we decide that our pot of money is "x" and we pay that total to those who contribute, verifiably, to "y" outcome.

The program price cap has been set, in consideration for the PSC's request to responding parties to keep the "benefit ratio" of what we propose, to above one point zero.[4]

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3 Connecticut Tier III credits are clearing below the capped price, a price set by regulators based, in part, on the average cost of efficiency programs funded by the rate base and administered by utilities

4 We want to underscore, though, that a GJ market structure provides annual revenues to end-users that, by our estimate, will average 80% of the entire program budget. This is not an expense, it is a transfer. Were

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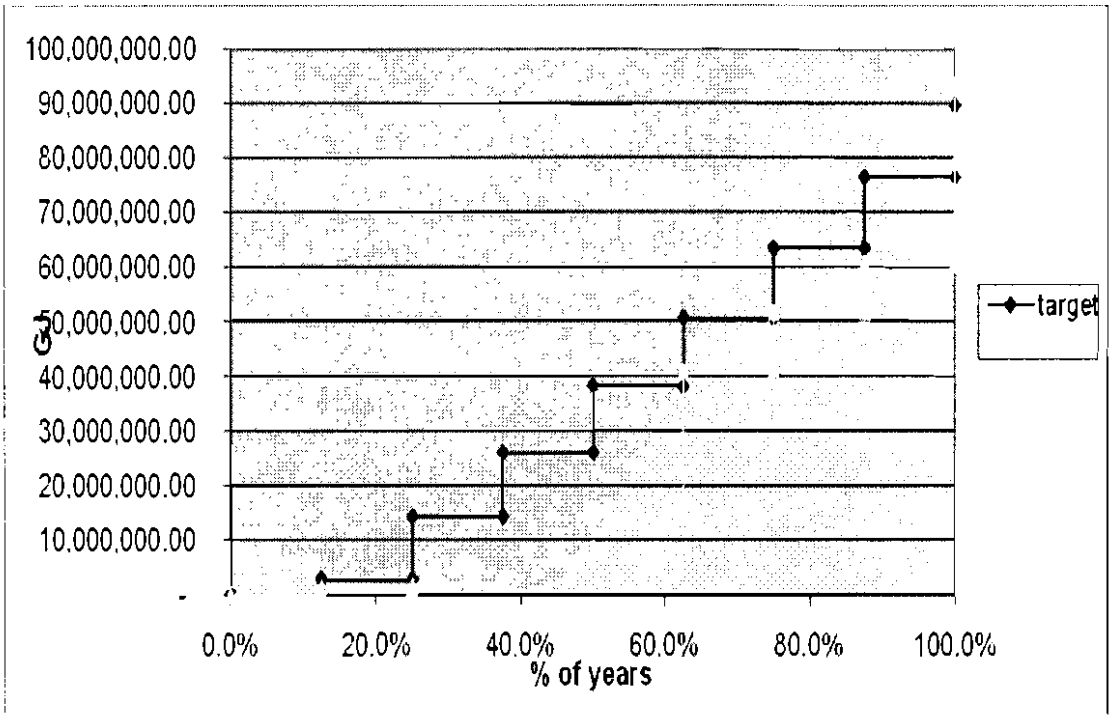
In essence, we have chosen "Path b," over the near-term. We expect that caps will remain in place, at least until stakeholders can gain some comfort in their belief that we'd be able to gain a good estimate of total costs, were we to eliminate the price cap entirely.

With Path b, per-unit prices tend to be high early, for the very few early adopters, and then moderate, over time as people learn of the opportunity, and drive the price down through oversupply. We project that we would achieve oversupply by 2015:



our >1.1 Benefit to TRC ratio to include this 80% revenue to end-users as a reduction in program cost, as we believe it should, the ratio would be >5.5. We have also chosen quite conservative avoided cost metrics Assumptions can be easily altered, yielding different projected benefit v. TRC ratios.

Short-term: the proposed market structure intends to jump-start the industry, without exposing people to some near-term, unknown exposure. Long-term though, when we set budgets, we're continually seeking to win the debate, in up years and down, that we need to put more money into the next authorization, than into the last.

Therefore, once we gain a handle on the "energy efficiency supply curve," such that we have better cost certainty, Path A is a more sustainable long-term strategy: That approach focuses on successful outcomes, rather than on the distribution of limited funds.

This is the first manner in which we will evaluate our program: A successful program will achieve oversupply at > 1.0 benefit/cost ratios, by 2015. How successful the program is deemed to be will depend on how much over supply we achieve at that ratio.

Should the program succeed, given the above metric, we therefore propose that we move to a compliance market as is in place in Connecticut, without price caps, by the earliest date on or pre-2015. Then, we'll have a goal to shoot for that rewards the market with an objective outcome.

We have estimated the total resource (GJ's) that we expect will be registered at each point in time[5]. The expected measures that we project will be implemented over the course of the next seven years, include:

GJ/measure	2007	2008	2009	2010	2011	2012	2013	2014	2015
commercial electronics	-	163,265 31	163,265.31	163,265.31	163,265.31	163,265.31	163,265.31	163,265.31	-
residential electronics	-	72,562 36	72,562.36	72,562.36	72,562.36	72,562.36	72,562.36	72,562.36	-
residential buildings - lighting	-	408,163.27	408,163.27	408,163.27	408,163.27	408,163.27	408,163.27	408,163.27	-
commercial buildings - LED lighting	-	-	-	740,740.74	740,740.74	740,740.74	740,740.74	740,740.74	740,740.74
commercial buildings - CFL lighting	-	689,342.40	699,708 45	699,708.45	699,708.45	699,708.45	699,708.45	699,708.45	699,708 45
residential buildings - new shell improvements	-	-	-	-	330,327.41	337,896.28	344,654.21	283,832.88	290,590 80
commercial buildings - new shell improvements	-	-	-	-	1,527,950.31	1,663,768 12	1,833,540 37	1,324,223.60	1,460,041.41
commercial buildings - combined heat and power	-	-	497,570.46	1,471,115 43	5,803,088.22	5,803,088.22	5,803,088.22	5,803,088.22	5,803,088.22
industrial process improvements	-	-	-	-	4,857,368.54	4,896,768.98	4,896,768.98	4,896,768.98	4,896,768.98
industry - combined heat and power	-	-	-	-	-	11,142,857.14	11,142,857.14	11,142,857.14	11,142,857.14
residential water heaters	-	-	-	-	-	5,523,809.52	5,523,809.52	5,523,809.52	5,523,809 52
commercial buildings - control systems	-	-	-	-	-	2,888,888.89	2,888,888.89	2,888,888.89	2,888,888 89
residential buildings - shell retrofits	-	-	-	-	-	3,299,522.52	3,375,125.33	3,442,627.83	2,835,105.27
commercial buildings - HVAC equipment efficiency	-	-	-	-	-	3,279,595 12	9,827,436 55	9,827,436.55	9,827,436 55
residential buildings - HVAC equipment efficiency	-	-	-	-	-	-	4,057,168.45	13,385,200.87	47,446,519 58
total	-	1,333,333.33	1,841,269.64	3,555,555.56	14,603,174.60	40,926,654.92	51,777,777.78	60,603,174.60	93,555,555 56
% expected GJ achieved	0.00%	1.43%	1.97%	3.80%	15.61%	43.75%	55.34%	64.78%	100.00%

As indicated above, an important aspect of our proposal is the development and publication by NYSERDA of a comprehensive and transparent "catalogue" of approved energy efficiency measures, which also quantifies the amount of GJs that will result from the implementation of the

5 We're basically assuming that, with one clearing price for the GJ, each year, the most cost-effective measures and/or the most technologically scalable interventions are completed first. Table 3.1 delineates total resource expected by end use measure, by year. We built the expected supply curve from these assumptions.

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various approved measures. Among other benefits, this aspect of the proposal will provide an objective basis to measure energy savings attainment and will make the process transparent and more efficient. Our assumptions about, for instance, a measure's persistence, should be taken therefore, as merely placeholders, pending the process in which stakeholders define objective measures and metrics.

To estimate the expected budget, we multiply the expected outcomes (Total GJ's registered) times the expected clearing price (price cap), over the course of the next four, then seven years[6]. The following Table delineates what we expect to achieve (register for sale) versus our price caps, for each year, generating budgets, through 2015[7].

	budget	total (GJ)	price cap per GJ
2007	0	0	0
2008	$ 55,615,195.21	1,333,333.33	$ 41.71
2009	$ 79,960,039.68	1,841,269.84	$ 43.43
2010	$ 156,105,101.50	3,555,555.56	$ 43.90
2011	$ 680,190,768.16	14,603,174.60	$ 46.58
2012	$ 2,552,718,491.99	40,920,634.92	$ 62.38
2013	$ 3,080,017,900.70	51,777,777.78	$ 59.49
2014	$ 3,506,773,876.05	60,603,174.60	$ 57.86
2015	$ 4,626,529,005.40	93,555,555.56	$ 49.45

Let's compare two individuals' personal view of this market, to demonstrate how the program could be better described as a redistribution of benefits, rather than an expense. Contributing to its efficacy, the redistribution is from those who do nothing to alter their consumption, to those who create the benefits of reduced consumption.

Assume we have two energy consumers who use ten- and twenty Joules of energy, respectively. Now let's assume that the consumer who uses twenty joules cuts his use by fifteen percent, down to seventeen units and compare how he does in a GJ market, with how his counterpart does, who still uses ten.

For simplicity, we've assumed that we have assessed ratepayers a 10% "surcharge" on each joule they purchase, in order to fund the GJ market.

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6 Budgets are simply the price cap times the registered resource, in each year of the program's operation. In the final year we assume that we clear the extra resources at the same price as the cap, even without the cap.

7 This is a price-cap that is blended price cap, weighted by zones. We assume that different caps will be in place in different zones, and that these will be set by objective market indicators (1.1; EIA price projections, etc.)

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The following table illustrates how each user does, on net, before and after the implementation of the market, taking into account certificates sold by the first consumer, from his offset project:

	Total Cost Before	Total Cost After
Large user who reduces	20	15.72
Smaller user who does not	10	11

The difference for the large user comes from the combination of savings achieved and that user's earnings from GJs.

Some will argue that this is "double counting," in that the end-user is already getting the benefit of energy saved: "why add the certificate cash-flow?"

We create multiple cash flow streams for the same resource delivered in different markets all the time.[8] "Should" we allow a cash flow because it is or it is not "double-counting" is subjugated to: "**What are we achieving**, of our social goals, **at what net cost per unit** of achievement?"

Key to successfully creating energy efficiency markets is to distribute dollars in a manner that most rewards the decision-makers, who hold sway over the individual project decision (e.g. "do I install a new boiler?").

Many have observed that, despite the fact that energy efficiency makes economic sense as an investment, few end-users install it. Further, few financial institutions offer loans on any mass-market scale for energy-efficiency projects. We believe that one factor is primarily responsible for these "market failures."

- We have not created a dedicated, annually recurring cash flow for energy efficiency, as we have for demand response and other new market initiatives (e.g. renewable credits).

To support this observation, we look at a building owner, a building tenant, and a financial institution, respectively:

1. The traditional commercial building owner, who rents to tenants, values his property based on net operating income ("NOI"). Tenants pay him for electricity, based either on a per square foot assessment that rises in proportion to total

8 e.g. most power plants are running in energy markets when they are called for activation in capacity markets.

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energy use in the building, or based on a sub-meter that captures the tenant's use. Owners tend to gain some free cash-flow in the complexities of either structure. As a result, reductions in energy expenditures don't necessarily flow to the benefit of owners. Yet, these free cash flows are not predictable or sustainable enough to add to NOI. Therefore, energy-efficiency infrastructure improvements don't appreciably alter the value of the building. A recurring cash-flow from certificates, with its clear quantities of GJs over time (persistence and erosion of measures) can be easily valued into a building's NOI.

2. A tenant in a commercial or residential building often pays the owner for electric, as outlined above. Because costs are socialized at the building level, and because even the longest leases are only five years, individual tenants have little motivation to conserve and even less motivation to pay for efficiency infrastructure improvements. Further, there is no unified "tenant," as each office space contains high-technology workers, sales personnel, administrative staff, facility managers, etc. A recurring cash-flow from certificates for measures that are installed by a tenant could be registered by the end-user who pays the bill, even if that end user pays the bill to their landlord. This offers the opportunity for facility managers of their own leased space, to directly offset infrastructure upgrades with cash. It offers the leaseholder the opportunity to implement rewards programs for all office personnel who follow energy efficiency best-practices. It further offers a fungible product for new tenants taking over a space: preserve the efficiencies (or enhance them?), and the currently (newly?) registered certificates continue to produce revenue.

3. A bank will sometimes offer a loan for an end-user to install energy-efficiencies. Payment can be backed by the expected savings from the efficiency measure installed. The problems with this are severe, however. Any salesman proposing that an end-user access this "shared savings" structure, will run into resistance related to disagreements as to what constitutes savings. Also, a simple loan-payment structure will have to ultimately rely on the full faith and credit of the recipient as energy prices rise over time: savings in consumption can easily be eclipsed by higher costs per unit of consumption. Further, the bank cannot cost-effectively repossess a small item like a meter, a large item like a chiller, or an intangible item, like a control algorithm. A certificate market solves each of these problems: a registered certificate is a registered certificate. No arguments. A registered certificate is transferable and fungible, with a predictable market value: it is independent of energy prices and can be repossessed.

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The devil that dictates success or failure though, can sometimes sit in the details. Some markets add back environmental assets sold as "shadow kW" consumed, onto the seller's bill.

This market feature wouldn't meet the test of smart policy. Smart policy rewards decision-makers with an added **net** value in exchange for the value created through the decision. Beyond the waste behind creating a complex market that simply moves cash from an end-user's left pocket into her right pocket, this decision to "reconstitute" energy bills, when it is implemented, creates additional serious problems. Different stakeholders would own the certificates, than pay the energy bill (see the above tenant/owner misalignments). Reconstituting will simply reinforce these stakeholder misalignments, and breed the need for more regulation in our new efficiency markets, mirroring our old mistakes with new ones.

So, to address the cash-flow issue in a manner that overcomes the above barriers without creating new barriers, we are **socializing the cost**, but **individually capitalizing** the benefit.

This is an essential feature of a market that we are designing, specifically to create sustainable and less expensive abatements, beyond 2015.

Whereas we can plot the supply curve for energy efficiency and renewable energy generation, fairly effectively, over the near-term and for moderate objectives[9], deep reductions in carbon intensity along the lines of our more aggressive social goals will come at an unknown cost. McKinsey estimates that the carbon reduction "supply curve" will be almost vertical, at above $90 per ton of abatement, at the point that the nation seeks to abate beyond 3 gigatons, well short of a 90% reduction in energy intensity. The carbon reduction "supply curve" can be simply represented as[10]:

9 e.g. as outlined in Exhibit B of the McKinsey report of November 2007, *US Greenhouse Gas Emissions: How Much at What Cost?*

10 The y axis represents net cost per unit of reduction, and the x axis represents total units of reduction achieved. The slope of the line is the marginal cost of the last unit of reduction, brought into play.

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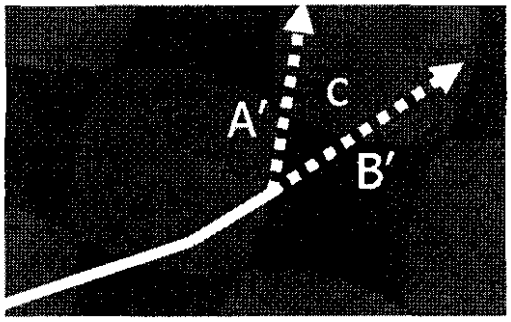

We know it will cost more to get more, but we don't know whether it will cost a lot more to get a little (A') or whether we can continue to scale our efforts at only marginally higher costs (B').

These twin challenges: cost uncertainty (the vertical nature of the supply curve, at the outer edge), and quite high costs per unit of reduction, fuel the most powerful resistance to efforts to comprehensively address this problem. Our market design is intended to create forces that achieve two outcomes:

1. Narrow the band of uncertainty, about future costs and benefits, as soon as we can. From the individual's perspective, (s)he will be less likely to undertake any project if the costs and benefits of that project are uncertain. In the presence of a GJ market, one portion of a project's benefits will be clear. Additionally, though, a GJ market will feature many new companies, offering not only new jobs, but new job functions. Key among these will be individuals who propose projects to end-users. These individualss and companies will succeed as they hone the cost/benefit estimates of these projects, as effectively as is possible. This goal gives rise to our second objective evaluation metric: we expect that there will be more low-risk projects, so, the financial industry will offer to provide a critical mass of market-wide securitization offerings (willingness to advance dollars for >40% of the upfront costs of the targeted market transformation?). Success in this metric will indicate that we are more certain of our future, as it offers companies that propose projects more arrows in their sales quiver.
2. Create economies of scale to reduce overall costs. We often focus on the simple calculus that suggests the more we do of something, the less expensive it is per unit to do that something. This is absolutely true for processes that can be automated and for services that can become specialized. An additional set of economies is created through an open market, though: as something becomes easier to do, many more competitors enter the market and drive margins and prices down. Also, competitors begin to focus on marketing and scaling the more difficult and expensive projects, because these are where they will face less competition, at least over the near-term.[11]

11 We feel we will have captured clear evidence of success, with respect to this metric, through our first evaluative algorithm.

We have spawned scores, and will soon see thousands of businesses, small and large, that feed on the highly specialized knowledge and technologies required to master the complexity, and present it simply and transparently, in these new and rapidly expanding markets.

Coordination and Timetables—Integrating Key Stakeholders and Current Programs

The Utility Role

The central role for our utilities is to provide a transmission and distribution infrastructure that is locally reliable. Further, they work with grid operators to ensure that the grid as a whole does not fail more than one time each ten years.

They, therefore, have a very legitimate fear, which should concern us all: Our transmission system should not be dependent on revenue from energy sales to fund maintenance, as it often is, currently. If this continues to be true, as we use less of these lines due to local generation and general efficiency gains, our lines will be less well-maintained and therefore, less suitable for what is our primary need from them: reliability.

Utilities essentially provide a predictive maintenance function, a service and communication process, and an insurance product.

Our wires are valuable for what they transport, but they also need to be valued in a manner akin to the insurance product that a utility delivers. Many of a utilities' functions require higher margins than they currently receive, as they require reserve funds, smart people, sophisticated analysis and real-time measurement.

Yet, we treat the utility like commodity providers in that we pay them per unit of energy transported, rather than per unit of reliability guaranteed. Further, we set a very narrow profit band for utilities, no matter how well or badly they perform. This market structure was an unwise market structure when it was devised, and it will become untenable as we continue to expect a reliable grid. As we use less, we need to find new, adequate, and reliable revenue streams for our transmission and distribution networks. These should be unrelated to the quantity of product that passes through them.

We propose a social compact: let's allow utilities to retain a higher margin (15% - 20%?) on value that they create **that is related to their unique value, and can be sustained from year-to-year.**

In exchange, let's begin the process of moving away from throughput-based rates. This is the only way in which we'll be able to substantially reduce rates, on average, for all consumers: the utilities will make higher margins on substantially reduced revenue.

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Timetable: As such, we invite New York State utilities to dedicate their dollars available as a result of PSC Proceeding #07-M-0548, through an RFP process or through a tariff structure that is open to all aggregators who register, toward programs that will create sustainable dead-weight gains for the system. These may be layered on top of Independent System Operator programs, as was Rider U layered on top of the Special Case Resources program. We propose that such programs be developed, in tandem with various stakeholders, over the next forty-five days.

Dead-weight system gains will best be achieved by leveraging utilities' fundamental strengths, in formulating programs. Strengths include utilities' knowledge of real-time system needs at each local node, of what it will take to adequately maintain the infrastructure at these nodes, and of how much it costs to buy and deliver the last MW of power, in times of stress.

Thoughts on such programs include steam demand-management offerings, VAR's management offerings that reward capacitor banks (through, or in addition to the Tariffs described in the Order), voluntary real-time load-shedding offerings through one-way communication hardware, localized regulation load-shedding offerings, etc. Sources of potential dead-weight gain include avoided plant start-up costs, avoided settlement costs, when real-time prices spike, as opposed to day-ahead prices, reduced transmission and distribution maintenance costs with increased throughput, etc. We request the PSC and other involved stakeholders, that, for these programs only, we permit greater margins built into the tariff structure for the utility, as long as these revenue streams are **value-based.**

We prefer that utilities not focus on energy efficiency initiatives, as these measures create predictable outcomes that allow all parties to plan in tandem, with complete transparency.

We have proposed several "rules of thumb," below that we feel will help simplify the overall efficiency market.

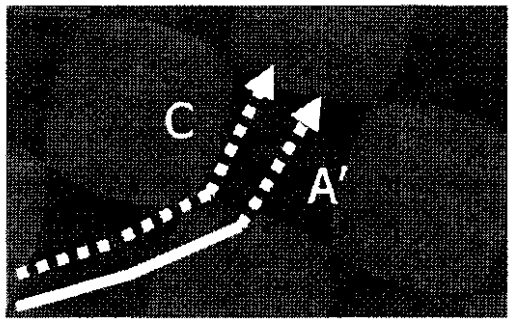
Structurally, utilities have always faced a perverse incentive to raise costs for the end-user. When a utility applies to regulators for a rate structure, the regulator seeks to ascertain the sensibility of the utility's cost structure that underlies the rate. Then the regulator grants, what is usually a rate hike, and accepts an embedded "profit" for the utility of roughly 10%. Hence, costs of $1 yield "profits" of $.10 and costs of $2.00 yield "profits" of $.20.

Now, many feel that this structure creates a barrier to energy efficiency, in that utilities resist the implementation of energy efficiency programs. This is not true, in that utilities tend to be quite open to energy efficiency programs. Further, the contention that a utility's resistance to a specific project would actually stall a project is simply a misperception. In the presence of a free energy efficiency market, there is no barrier that any utility can construct to prevent the economics of the project from dictating the end-user's decision.

The only barrier that could be constructed is one that comes from misguided attempts to reward the utility for energy efficiency achieved in its geography by compensating it for lost sales. Some mistakenly refer to such efforts as decoupling in that they theoretically make the utility agnostic, with respect to an efficiency project. We call this "**recoupling,**" in that it repeats our past mistakes in market structure, and expects a different outcome this time around.

Why is demand side management flawed? Individuals who work in the utility are quite motivated and work hard to achieve energy efficiency in their base of end-users. Yet, they are not immune to structural reality. Efficiency programs administered by the utility offer a direct incentive to the utility to raise the cost of whatever efficiency it buys. Recoupling takes the worst feature of regulation of the power sales industry and transports that same failing over to the energy efficiency industry. In the presence of this sort of a recoupling regime, regulators need to determine if a utility is accepting efficiency projects that are not cost-effective, with results that drive up revenue by a factor of 1.1, on a higher base.

In a recoupling regime, most of the pressure on energy efficiency prices would be upward, driving the total cost of energy efficiency up. We contrast expected outcomes from a recoupling regime with those we outlined above:



C' represents the total cost of energy efficiency measures over time, when we add in the recoupled utility's 10% margin, funded by the rate base. Naturally, recoupled utilities will want the slope of A' to be greater because when it is, the 10% margin they receive represents more real dollars.

Recoupling advocates support fully funding utility-administered energy-efficiency proposals. Yet, if they succeed in getting their wishes fulfilled, they will unwittingly drive up the cost of our efficiency opportunities.

Further, the pots of money that recouplers seek come with hidden down side. Those who access these dollars are surprised to discover in the contract fine print, that they gave up most, if not all, of the free market cash flows that would have otherwise come to them. Recoupling dollars completely confuse the end-user. When free efficiency markets co-exist with traditional utility

DSM programs, end-users are so confused that they act like a deer caught in a strong headlight—they do nothing.

Further, placing utilities in charge of administering DSM funding, creates a very stark conflict of interest, beyond the skewed incentives, outlined above. Even the most basic ethicist can see the problems that we create when we allow an administrator to also freely compete against those it administers.

The argument that a utility is particularly well-suited to market energy efficiency, because of its traditional role as trustee for us all, is equally absurd. The utility is known and respected for providing a reliable source of power. Everyone knows that a utility earns more when it sells more. People do not tend to deal with opposite products being sold to them by the same salesperson. No matter what complex rules we put in place to seek to change the utilities' ultimate motivation, asking people to sell their energy efficiency through a utility as "trusted advisor" is like asking them to make their surgeon the beneficiary of their life insurance policy. The two products are fundamentally at odds.

In *The Little Prince* a king asks who is at fault if he orders his soldier to turn into a bird and that soldier fails to do so. It is time we reward our utilities for better leveraging their strengths, rather than seek to turn them into something they are not.

NYSERDA's Role

We propose that NYSERDA administer all aspects of the gj Program. Objectively distributing efficiency dollars is a natural role for this state agency, with its quite extensive experience and credible history. However, it should be in any authorizing document that the agency should distribute these funds, through objective, transparent, numerical equations, that seek to estimate efficiencies achieved, beyond an objective benchmark or baseline.[12]

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12 Objective Measurement- Measurement and verifieation algorithms need be so objectively applied, that one could in theory, self-eertify. **Bureaucracy is eliminated with objectivity**, just as it **feeds on subjectivity**. We therefore, cannot impose an "Additionality" aeid test, in the manner that such a test has traditionally been applied.

Additionality proponents are well intended: they seek to ensure that we aren't kidding ourselves, as a society when we assert we've achieved an outcome based on our intervention. If we're spending money, it's smart to be certain that that government money is actually funding outcomes beyond what we would have aehieved, without the money.

Yet ill-advised funding distribution schemes take that sensible statement to a senseless next step: our "acid tests seek to determine that we are achieving "surplus" energy efficiency, with each project we fund.

Additionality, as it is usually enforced, then saddles those regulators who implement traditional incentive distribution schema, with a burden: If they subjectively determine that available dollars played no decisive role in determining whether a Joule reduction project would have been built, the regulator needs to deny registration for that project. Regulators are then forced into roles as dollar police, seeking to read the minds as to what motivates an end-user to install a new, energy-efficient, air-conditioner. This is an extraordinary waste, not only of dollars, but of bright and motivated young men and women's time

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NYSERDA's administrative role entails several critical components, on a clear **timeline**:

1. As we outlined above, the agency will develop and publish a comprehensive and transparent "catalogue" of approved energy efficiency measures that would give rise to Gjs and a comprehensive and transparent set of procedures for measurement and verification (including provisions for "deemed savings" applicable to certain measures). This process will involve all stakeholders, yet rules for 2009 should be complete by November of 2008.
2. Registration of Gjs. NYSERDA will issue an RFP to create a registry for all Gjs, to be in place by early 2009. Bilateral transfers would then, simply need to be certified by the seller, to NYSERDA.
3. Measurement and verification. NYSERDA would administer all M & V plans, in exchange for a 5% fee. Within some additional fee structure, NYSERDA will analyze and report on program outcomes: specifically, whether the program is succeeding in creating "surplus" outcomes, in line with the "15 by 15" goals.

Coordination and Leverage with existing programs and infrastructure

To integrate "Fast Track" and "Expedited" programs with the gj market, we propose that existing programs be administered with some "rules of thumb" in place:

a. NYSERDA and Utility projects will certify outcomes via the gj process/standards
b. NYSERDA ($189M) and Utility funds ($XXM) for efficiency certificates will be disbursed to the project owners of NSYERDA and the Utility program projects via the gj Market Registry. Each end-user should be offered the alternative of owning the Certificate himself, for potential transfer to another party, sale in the auction, or asset retirement.
c. Government, or ratepayer-funded initiatives that go directly to end-users to achieve reductions, ought either to cost less than the gj clearing price, or they should be classified as research and development funding, meeting the R & D standards[13]

Further, judgment-laden bureaucracies also present risks of the expense, delays, and headaches being in vain, with the pot of gold lying undelivered, even for those who seek to enter a market and engage with the highest standards of integrity. The most efficient markets share one feature: certainty. We expect to know what product we're going to get before we buy anything.

Additionality acid tests will work to target the least cost-effective energy-efficiency initiatives, which are properly R & D projects

How do such markets risk harm to well-designed markets, which operate with parallel expected outcomes and project mixes? They simply confuse the decision-maker into inaction. Incentives are usually, at least to a degree, mutually-exclusive with respect to access to other dollar flows available elsewhere.

13 **Research and Development Features-**When the Gj market is fully mature; we ean easily quantify our budget for research and development, based primarily on whether the market is over or under achieving. The maximum budget is defined as our target for that year, times the price cap for that year. Unspent funds come from undersupply. These could naturally go to research and development.

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d. Government, or ratepayer-funded initiatives may not securitize the expected cash flows from the certificates, unless that securitization is financed privately, backed only by the certificate cash-flow, rather than by the taxpayer or by the full faith and credit of the utility.

e. If a Utility has already fulfilled their zonal MWh reduction target, then they can sell their projects bilaterally, to other utilities, who must also cover the wheeling charges. This actually creates an "up-side" for Utilities if they over-perform through their customer base, while also helping hedge the risk of underperformance.

Goals for Process Outcomes and Process Costs

We believe that measurement and verification should cost no more than 5% of the measure's value. Further, in newly emerging environmental asset markets, our objective measurement requirements and standards should cost-effectively achieve three outcomes:

1. 95% of market participants will provide
2. resources to within 5% of what they are able to register
3. those that provide more than they are able to register will approximately balance those that provide less.

We cannot expect NYSERDA to design measurement and verification algorithms that are perfect, beyond the above targets. If we do, measurement and verification will cost more than is justified and will threaten the viability of our efforts.

Because recurring revenue for certificates is essential to ensure that measures are maintained, most projects will qualify for multi-year registrations of certificates. Therefore, NYSERDA will also need to clarify each measure's assumed "erosion." Over time, an installation that was "state-of-the-art," becomes dated. Market participants need to know the facts with respect to how that reality will be treated. While this will involve multi-stakeholder participation, we offer suggestions:

- Large, retro-fit projects could require PE certification and continuing measurement,
- New purchases of consumer products and new builds could be compared to a baseline of the average efficiency of products sold in that year, or to the codes for new building in place at that time,

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We believe that research and development expenditures are best targeted for critical technologies **and** services:

1. with **vast** potential size,

2. that are not yet **nearly** cost-effective **and**

3. that will likely become **very** much more cost-competitive, with targeted research.

However, such technologies and services tend to be few. Central decision-making is also often wrong about which are the technologies of the future and it does not tend to recognize bad technology bets as quickly as does the free market.

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- Multi-site retro-fits could be submitted with either a statistically sampled random survey, or with a template engineering report on what was in place prior as opposed to afterward,
- Small commercial retro-fits could be estimated, based on benchmark efficiencies for comparable operations, in comparable geographies.

Program Marketing & Operational Cost Efficiencies

Essential, is that NYSERDA **must invite all** to the party, **from the get-go**. In a jump-start economic environment, we cannot phase a program in, with only certain segments of a society eligible. This is often justified by the argument that these segments (generally larger end-users) place less initial stress on a bureaucracy's ability to handle a program, as opposed to one offered more broadly.

Homeowners, for instance, cannot be shut out of the Gj program. Others have, in the past justified such decisions with explanations such as: "we'll get to them later;" or "they have as much money available elsewhere, through other programs."
This is not economically sensible. If we effectively shut out the homeowner from earning money in these new efficiency marketplaces, we shut out our consumer product sector from earning money by designing these highly efficient new mass-market products, and we shut out our retail sector from making money by distributing them.
By limiting all efficiency we achieve to our large commercial building sector and to our industrial sector, we raise the cost to these sectors because we burden them with the entire job (to achieve 10% total reductions, half the market will need to achieve 20% reductions), while we effectively reduce potential gj supply products, raising the total cost of each certificate to levels that are fed by the market failure to encourage all innovation in all arenas.
The argument that a program is too expensive to monitor and verify can always be addressed by self-certifying aggregators, and by measuring in real time at some fatter point in the pipe than at the mass-market level.
We can use statistical sampling, assumed savings (e.g. if I buy an LED light bulb, I'm going to use it, most likely in the geography I live in), in order to ensure that our measurement costs do not exceed the benefit we gain socially and, to further ensure that efficiency credits are available to all sectors of the economy, including the "little guy."
In fact, a program that is available and cost-effective for the mass-market, will advertise itself. Consumers who participate will also bring their knowledge of the program to work with them. This will speed adoption in all sectors of the economy.

Less Currently Quantifiable Prospective Benefits
Administrative Savings-Some of the Legacy programs retain substantial administrative expense in them. We have sought to outline a set of precepts (e.g. objectivity, consistency, self-certification, remote registry, etc.) that we expect will reduce the administrative costs of the overall program to as little as an aggregate of 10% of total budget. Rather than project what these savings will be (too many untested estimates) we have chosen to outline sets of market precepts

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that are intended to reduce administrative inefficiencies, and calculate the beneficial budget effects (if any), after the fact.

Consistency of standards-We all recognize that regulations and targets will change, over time. Based on historical precedent, we will generally be able to achieve more than we expect, more cost-effectively than expected, when we create a market that freely rewards specific outcomes. Entrepreneurial minds invent technologies and services that help to achieve these outcomes when the market is set up to work. We will see that in a free-market environment of falling costs for energy efficiency and renewable generation, coupled with rising costs for fossil fuels, regulations and target outcomes will change and likely grow more rigorous over time. Before market implementation, we aim to work with all parties codify the difference between **retroactive** change and **pro-active** change, with the recognition that the former is self-defeating, and the latter simply provides the flexibility to adjust what we choose to achieve.

Ensuring Overall "Surplus" Effectiveness-In a broad market-based initiative, such as any cap and trade regime, the job of determining the impact of our policies on what people do in markets is for researchers and academics and **only** for them. As such, NYSERDA has a valuable role in sampling projects and unbundling the variety of factors that helped make these projects happen. Then, they contribute handsomely when they help inform us all about how much our dollars are actually buying, from a perspective of the total impact of the market as a whole.

This helps us to determine whether our standards are aggressive enough and our eligibility requirements objective enough that we are actually achieving cost-effective "additional" energy efficiency.

Data ownership and privacy-An **individual**'s behavior, as long as it's legal, is his or hers to keep private, or communicate publicly, as (s)he chooses. Energy consumption and changes in energy consumption are absolutely reflections of an individual's behavior. As such, the distribution of individual energy consumption data and of individual data (e.g. total certificates registered by location), should be governed by two things:

1. To whom (i.e. NYSERDA, the PSC) does the individual need to report to verify anything that they have attested to, in order to monetize an asset and
2. To whom has the individual offered access, explicitly, in any private engagement.

Such information as to: who is enrolled, how many kW they have offered up to specific programs, what is the reservation price for that kW they have offered, are private. It does not matter if this information is published after the fact: when end-users discover this truth, some who have even vague concerns about unknown risks of release of proprietary information, will exit, or will choose not to enter, the gj market.

Data integrity and openness-Aggregated data falls into the realm of the public's right to know. Anyone building a business, designing or assessing a market, comparing what they have done in their individual facility with what they may have the opportunity to do (e.g. "benchmarking"), can use this aggregated information effectively, to do better. This extends, not only to sect oral information such as how the paper industry consumes, or has succeeded in participating with various efficiency projects, but also to geographical information. For example, we could meter a neighborhood or a town, and use the data to register total certificates in town.

Additional, Yet to be Quantified, Benefits

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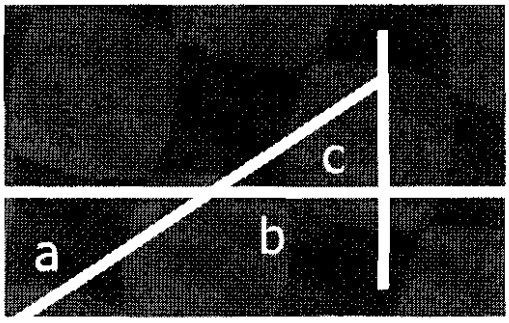
We observe that no calculation of the benefits from avoided use of fossil fuels that we have yet seen, including the ground-breaking McKinsey Report, has calculated the Black-Scholes value of avoided volatility from avoided use, in its models. We sought to do so, but did not come up with results that were intuitive enough that we feel comfortable releasing those (errors in calculation?). From our experience in fossil fuel markets, even optionality between fuels offers a ten percent added value, when it's retained over five years. This proposal includes a thirty year stream of avoided volatility from avoided fossil fuel use. We are convinced that this additional value will substantially alter the Benefit/TRC ratios, when it is accurately calculated, but we advance no estimate on the size of this benefit, in this paper.

Additional Stakeholders & Co-Benefits



When we pay a total of a + b for energy efficiencies achieved that are extrapolated out along the diagonal line, the area, a represents the sum total of the budget that will be split between:

1. Extra cash that end-users who install efficiency measures will have, to spend as they please and
2. Margins retained by those who market, install, register, and monitor energy efficiency measures.

ConsumerPowerline operates as a market participant interested primarily in the value that any "environmental asset" market design brings to its primary clients: energy end-users. We will administer the market for our own client base, and will seek to expand the market, as will other such **efficiency providers** and **community-based organizations.** As such, we aim to create the largest sustainable market possible. We aim to build that market in as painless a fashion as is possible for those who already make a living in the existing energy markets. Such a market is sustainable to the extent that it achieves:

Significant energy reductions at the most efficient social cost, long-term.

To project the jobs that will be created in the efficiency provider and community-based organizations, we have assumed that service providers in the industry retain 20% margins as a percent of the entire annual program budget, then hire with these revenues. We've assumed an average annual salary, fully loaded with benefits and facility costs, of $120,000.

	Budget	Jobs
2008	$ 55,615,195.21	93
2009	$ 79,960,039.68	133
2010	$ 156,105,101.50	260
2011	$ 680,190,768.16	1,134
2012	$ 2,552,718,491.99	4,255
2013	$ 3,080,017,900.70	5,133
2014	$ 3,506,773,876.05	5,845
2015	$ 4,823,381,631.02	8,039

Consumers—Needs & Benefits

Key constituencies within consumer segments include the mass market (homes and apartments, with an income subset) and very large energy users, such as manufacturers, retailers, nonprofit/government institutional organizations, commercial properties and financial institutions. We include the Consumer Counsel in this grouping, as representative of the above.

We want to again underscore that 80% of certificate revenue goes directly back to consumers. Were this to be calculated into the Benefit to TRC ratio, the ratio would be >5.5, instead of >1.1.

We've estimated benefits from 80% of Certificate revenue, to various stakeholders[14]:

Certificate Revenue by Sector	**Commercial Tenants**	**Commercial & Institutional Owners/NGO's**	**Homeowner & Multi-family residents**	**Industrial Sector**
2008	$ 16,949,392.83	$ 11,501,373.70	$ 16,041,389.64	$ -

14 A Table of measures and their assumed contribution to each year's total resource is included in Appendix. In the final year we have here assumed that, because more resources are available than 15%, stakeholders can procure all the resources available by setting a cap price that achieves a 1.1 benefit/cost ratio; this is similar to the demand curve approach, currently in place with Special Case Resources.

2009	$ 17,826,418.42	$ 29,440,600.11	$ 16,701,013.21	$ -
2010	$ 31,031,388.25	$ 76,967,855.44	$ 16,884,837.51	$ -
2011	$ 32,921,152.71	$ 300,011,196.21	$ 87,157,403.69	$ 180,998,300.89
2012	$ 125,926,542.21	$ 716,425,171.27	$ 288,550,656.11	$ 800,469,499.62
2013	$ 275,879,046.57	$ 1,002,835,890.98	$ 480,223,308.61	$ 763,297,888.59
2014	$ 268,362,155.24	$ 951,934,468.96	$ 875,680,550.10	$ 742,500,269.65
2015	$ 232,372,360.07	$ 853,759,707.12	$ 2,146,074,010.88	$ 661,555,479.25

The value of the program for each consumer and production market segment is far beyond the above certificate revenues, when we assume payback periods of one, two, three, and four years for our range of measures. This additional benefit includes the net negative cost (benefits, primarily from long-term savings) to the end-user who installs a measure for manufacturers, retailers and contractors, the net benefit, not calculated above is captured in area b, under the above curve. For financial institutions, we have simply and preliminarily quantified the securitization opportunity, based on payback periods for a project.

We particularly invite no n-government, and nonprofit educational institutions, active in this proceeding and beyond, such as the **Natural Resources Defense Council**, the **Pace Law Institute**, and The **New York State Dormitory Authority,** to reply to this proposal with comments. These groups continue to provide a voice for adequate budgets, and for truly measured and significant outcomes, with respect to energy efficiencies achieved.

ConsumerPowerline would like to thank NYSERDA, New York State Utilities, New York State Public Service Commission, and all parties to the proceeding for the opportunity to submit this proposal: *An Opportunity in Time.*

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	2009	2010
15x15 MWh reduction goal	**511464**	**987654**

% reduction achieved

residential	**49%**	**30%**
cogen/CHP	**34%**	**20%**
CCX	**6%**	**4%**
lighting	**15%**	**20%**

$/MWh

RESIDENTIAL	**$ 395.04**	**$ 295.92**
COGEN/CHP	**$ 135.59**	**$ 133.94**
CCX	**$ 321.02**	**$ 331.75**
LIGHTING	**$ 147.19**	**$ 145.93**

MWh achieved

RESIDENTIAL	**250,000**	**300,000**
COGEN/CHP	**175,000**	**200,000**
CCX	**30,000**	**40,000**
LIGHTING	**75,000**	**200,000**

total value per measure

RESIDENTIAL	**$ 98,761,015.02**	**$ 88,776,439.44**
COGEN/CHP	**$ 23,728,607.71**	**$ 26,788,358.11**
CCX	**$ 9,630,678.68**	**$ 13,269,924.88**
LIGHTING	**$ 11,038,917.21**	**$ 29,185,424.27**

value/TRC ratio

			ratio
RESIDENTIAL	**$ 28,217,432.86**	**$ 25,364,696.98**	**3.5**
COGEN/CHP	**$ 9,491,443.09**	**$ 10,715,343.24**	**2.5**
CCX	**$ 2,407,669.67**	**$ 3,317,481.22**	**4.0**
LIGHTING	**$ 3,679,639.07**	**$ 9,728,474.76**	**3.0**

price cap per measure

RESIDENTIAL	**$ 112.87**	**$ 84.55**
COGEN/CHP	**$ 54.24**	**$ 53.58**
CCX	**$ 80.26**	**$ 82.94**
LIGHTING	**$ 49.06**	**$ 48.64**

budget

RESIDENTIAL	**$ 28,217,432.86**	**$ 25,364,696.98**
COGEN/CHP	**$ 9,491,443.09**	**$ 10,715,343.24**
CCX	**$ 2,407,669.67**	**$ 3,317,481.22**
LIGHTING	**$ 3,679,639.07**	**$ 9,728,474.76**