TRC

May 28, 2009

Mr. Michael Winka
Director – Office of Clean Energy
State of New Jersey - Board of Public Utilities
44 S. Clinton Ave., PO Box 350
Trenton, NJ 08625-0350

Re: Requested Changes and Budget True Up to Contract #A67053 – Commercial & Industrial Market Manager

Dear Mr. Winka:

TRC submits this letter to formally request revisions to Contract A67053 for providing services to the Commercial & Industrial sector of New Jersey's Clean Energy Program. These revisions are the result of program clarifications, changes in the marketplace, and input from market players and BPU staff. The requested changes are summarized below, with further detailed provided in Attachment A:

- Incentive Table – Clarifying language added as well as incentive for screw-in compact fluorescents
- Technical Assistance - Reinserting language that was erroneously excluded from prior filing
- Pay for Performance - Clarifying language to incorporate final design details. Also, proposing to increase incentives and caps for a defined class of customers
- Local Government Energy Audit – this document supersedes changes previously requested in our submittal dated March 31, 2009

Also attached are redlined versions of the relevant sections of the approved 2009 Program Descriptions and Budget as well as a proposed revised budget for 2009. We appreciate your consideration of this proposal.

Very truly yours,
TRC Energy Services

Francis X. Reilly, Jr.
Senior Vice President

Cc: M. Mosser, BPU
M. Ambrosio, AEG
D. Zukas, TRC

Attachment A – Explanation of Changes
Attachment B – Incentive Table
Attachment C – Technical Assistance
Attachment D – Pay for Performance
Attachment E – Local Government Energy Audit
Attachment F – Revised 2009 Budget

Attachment A
Summary of Proposed Changes
2009 Program Descriptions and Budget
New Jersey's Clean Energy
Commercial & Industrial Energy Efficiency Programs

TRC is proposing the following changes to its 2009 Compliance Filing:

Incentive Table:
Technology Classification - Prescriptive Lighting clarification – T-5 and T-8 lamps with electronic ballast replacing T-12 lamps. *Proposed Change: Electronic ballast replacement is necessary for all eligible de-lamped fixtures.*

Technology Classification – Permanently De-lamp fixtures and add reflectors as long as changing to more efficient lighting system. *Proposed Change: Incentives for de-lamped T-8 lamps with new reflectors are available only for fixtures with a total Harmonic Distortion of ≤ 20%. Electronic ballast replacement required for all eligible de-lamped fixtures. Eligible de-lamping can include reduction in linear lamp feet from existing conditions. For example, 1-8' linear fluorescent lamp can be considered as 2-4' linear lamps. U-bend lamps 4' in total length can be considered as 2-F17/T8 lamps.*

These changes are proposed to provide clarity to the market.

Technology Classification – Prescriptive Lighting – Added line item to incentivize screw–in PAR 38 or PAR 30 Compact Fluorescent Lamps (CFL) with Aluminum Reflectors replacing existing incandescent fixtures. The lamps must be warranted by the manufacturer for 8,000 hours, with a THD < 33% and BF > 0.9. The proposed incentive is $7 per lamp replaced.

Page 18:
Add clarifying language related to offering Technical Assistance Services. These services have been a part of the Clean Energy Program offering but were erroneously deleted from the 2009 Filing submittal.
Proposed change: In addition to the qualifying equipment incentives, customers with unique needs will be offered specialized incentives for Technical Assistance Services. Through the Technical Assistance Services component of the program the Market Manager provides technical support matched to the needs and capabilities of commercial and industrial customers. Services may include walk-through audits, detailed energy-efficiency studies for C&I buildings, and specialized technical studies, such as studies of industrial process improvements, chiller optimization projects, and compressed air projects.

Requirements:
Technical Assistance Services will be subject to the following requirements:

- *All proposed customer projects require prior review and approval by the Market Manager. This approval will be based on the following: a) only to help*

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customers decide about system improvements (e.g. chiller optimization); b) study will not be used to review application of a particular measure.

- *All custom measure proposals, including industrial process improvements, require Market Manager review.*
- *Technical studies will be reviewed or conducted by Market Manager staff.*
- *Building/system computer simulation tools will be scaled appropriately for the given project's needs. Simulation tools used for a given project will properly account for all viable options and reasonably reflect the proposed measure's operation characteristics.*

Technical Study Incentives and Cost-Share Requirements:

1. *The Program will cost-share the technical study on a 50%/50% basis.*
2. *The total Program contribution will not exceed $10,000.*
3. *The Program contribution can be increased to 75% for customers who implement the study's recommendations, not to exceed the total Program share of $10,000.*

Pay for Performance:
Added changes to incorporate details from approved program design. (The program was not designed at the time of the 2009 Filing submittal.)
Added language related to doubling the incentive cap for hospitals, non profits, universities and certain government entities as well as increasing the per kWh and therm incentive.
Added language related to removing 200kW eligibility requirement as well as increasing incentive cap from 50% to 80% of total project cost.

Local Government Energy Audit:
Proposing changes based on Staff and market input:

1. **Eligibility**: *TRC proposes the LGEA Program be open to New Jersey State Colleges and Universities.* Currently the LGEAP is restricted to public buildings owned by municipal or government entities below the level of a State agency. This could include but not be limited to: municipal offices, fire stations, police stations, schools, sanitation departments, transportation departments, regional authorities and community centers. TRC makes this proposal based on the request of Board Staff and agrees that these entities should be eligible for participation.

2. **Incentives:** *TRC proposes a tiered incentive structure along with an increase in the incentive cap*, as follows:

Tier	Incentive Cap
a. For all applicants up to 750,000 square feet	$100,000
b. 750,0001 – 1,500,000 square feet	$150,000
c. 1,500,001 – 2,000,000 square feet	$200,000
d. 2,000,001 square feet and above	$300,000

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The current maximum Program incentive is $100,000 per year for each municipal or local government entity. Since we began processing applications for this Program, TRC has encountered entities for which the cap prevented them from having all of their buildings audited. Entities that are trying to identify their energy issues and make improvements are also struggling with budgetary issues and eroding tax basis. The proposed tiered incentive structure above gives the larger entities, such as the City of Newark, the ability to have more of their facilities audited while still being mindful of the overall budget.

3. **Budget:** *TRC proposes a $6,000,000 increase in the budget for this Program from $4,998,000 to $10,998,000.* This increase in budget will support the increase in cap as well as meet the currently projected incentive payment and processing requirements. This budget allocation will come from the Combined Heat & Power Program incentive budget. Of the six million dollars, five million is related to the 2007 CHP solicitation. The highest-ranking projects from this solicitation were awarded incentives. Money was reserved in the event it was determined to award incentives to the second tier of applicants. In discussions with these applicants, many are no longer interested in participating in the program and the Board decided to not make additional awards under this solicitation. The balance comes from a 2006 awarded application in the amount of one million dollars, who has notified TRC that they are no longer going forward with the project. Refer to Attachment F for revised budget tables.

2009 Budget True Up

The 2009 Budget has been revised to reflect the following:

- Allocation of 2008 Carryover
- Line item transfer of $6,000,000 from Combined Heat & Power to Local Government Energy Audit
- Adjustments in individual line item quantities within programs (i.e., increase in quantity of partners to be trained in Pay for Performance)

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Attachment B

Technology Classification	20098 Current Incentive	Revised~~Proposed~~ 2009 Incentive
Prescriptive Lighting:		
T-5 and T-8 lamps with electronic ballast replacing T-12 lamps	$10 per fixture for one and two lamp retrofits; $20 per fixture for three or four lamp retrofits; $25 per fixture for new T-5 or T-8 fixtures with one or two lamps; $30 per fixture for new T-5 or T-8 fixtures with three or four lamps. No incentives for new construction or complete renovation. Eliminate 75 kW threshold for prescriptive lighting No incentives for new construction or complete renovation. Complete renovation is defined as 100% fixture replacement for the space involved.	~~No Change~~ Electronic ballast replacement necessary for all eligible de-lamped fixtures. No Change
Permanently De-lamp Fixtures and Add Reflectors as long as changing to a more efficient lighting system.	$20 per fixture. Refer to application for details No incentive for T-12 to T-8 retrofit	Incentives for de-lamped T-8 lamps with new reflectors are available only for fixtures with a Total Harmonic Distortion of ≤ 20%. Electronic ballast replacement required for all eligible de-lamped fixtures. Eligible de-lamping can include reduction in linear lamp feet from existing conditions. For example, 1-8' linear fluorescent lamp can be considered as 2-4' linear lamps. U-bend lamps 4' in total length can be considered as 2-F17/T8 lamps. For clarification, this $20 per fixture incentive applies to T-8 to T-8 replacement with permanent delamping and adding new reflectors which results in a more efficient

		lighting system with maintained light levels. $30 per fixture for the retrofit of T-12 to T-8 technology with permanent delamping adding new reflectors.
LED Exit Signs (New Fixtures Only)	$20 per fixture with facility demand less than 75 kW; $10 per fixture with facility demand greater than 75 kW	No Change
Hard-wired compact fluorescent surface mounted fixtures (New Fixtures Only, must be pin based technology with THD of < 33% and BF > 0.9)	Up to $25 per 1 lamp fixture Up to $30 per 2 or more lamp fixtures	No Change
Screw–in PAR 38 or PAR 30 Compact Fluorescent Lamp (CFL) with Aluminum Reflector replacing existing incandescent fixtures. Lamps must be warranted by the manufacturer for 8,000 hours, THD < 33% and BF > 0.9	None	$7 per lamp replaced
Hard-wired compact fluorescent recessed fixtures (New Fixtures Only, must be pin based technology with THD of < 33% and BF > 0.9)	Up to $25 per 1 lamp fixture Up to $30 per 2 or more lamp fixtures	No Change

Attachment C

The redlined section is proposed new language. This entire section should be placed after the incentive tables on page 17 of the Filing.

In addition to the qualifying equipment incentives, customers with unique needs will be offered specialized incentives for Technical Assistance Services. Through the Technical Assistance Services component of the program the Market Manager provides technical support matched to the needs and capabilities of commercial and industrial customers. Services may include walk-through audits, detailed energy-efficiency studies for C&I buildings, and specialized technical studies, such as studies of industrial process improvements, chiller optimization projects, and compressed air projects.

- *Chiller Optimization Incentive* is designed to (a) capture potential additional savings available at the time of a chiller replacement or conversion to a new refrigerant, and (b) help lay the foundation for market-based comprehensive treatment of major HVAC replacement projects. By examining ways to optimize the efficiency of the chiller system in relation to its distribution systems (pumps, fans, ducts, pipes, controls, etc.) while simultaneously reducing other building cooling loads (such as lighting), it is often possible to reduce the size (and thus cost and peak demand) of the replacement chiller(s). Additional benefits can include a better performing building and improved savings from the ancillary efficiency measures.

  The incentive is targeted at C&I customers with chiller plants of 500 tons or more that are in line for replacement, conversion, or in need of additional chiller capacity. Program offerings include: Technical Assistance for studies to identify potential savings and incentives for chiller replacements, incentives for lighting system improvements, and auxiliary enhancements, such as fans, pumps, motors, ducts, pipes, controls, etc.

- *Compressed Air* system Incentives are designed to capture significant energy savings from compressed air system optimization in industrial facilities containing significant compressed air systems (over 100 hp). These customers encompass many key New Jersey industries including plastics, chemicals, paper products, high technology, and pharmaceuticals. The focus is on the efficiency of all compressor system elements, including compressors, auxiliaries, controls, distribution, end-use, and operation and maintenance. As customer and contractor awareness and market demand build, the Program will adjust incentives for studies to maintain only the levels necessary to produce desired levels of market response.

Requirements;
Technical Assistance Services will be subject to the following requirements:

1. All proposed custom projects require prior review and approval by the Market Manager. This approval will be based on the following: a) only to help customers decide about system improvements (e.g. chiller

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optimization); b) study will not be used to review application of a particular measure.

2. All custom measure proposals, including industrial process improvements, require Market Manager review.
3. Technical studies will be reviewed or conducted by Market Manager staff.
4. Building/system computer simulation tools will be scaled appropriately for the given project's needs. Simulation tools used for a given project will properly account for all viable options and reasonably reflect the proposed measure's operation characteristics.

Technical Study Incentives and Cost-Share Requirements:

1. The Program will cost-share the technical study on a 50%/50% basis.
2. The total Program contribution will not exceed $10,000.
3. The Program contribution can be increased to 75% for customers who implement the study's recommendations, not to exceed the total Program share of $10,000.

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Attachment D

Pay for Performance

Background

Under the Pay for Performance Program approximately 30-40 businesses will be served through this innovative and comprehensive approach to market transformation. This program will initially be implemented under the New Jersey Office of Clean Energy's suite of Commercial & Industrial Programs presently being managed by its competitively selected Market Manager — TRC. The qualifications of TRC and its management, supervisory, and other key personnel were significant factors in TRC's selection as Market Manager. TRC's background and qualifications, including staff resumes, are described in Section 3 of its original proposal in response to Treasury's RFP 06-X-38052.

Program Description

The C&I Pay for Performance Program will take a comprehensive, whole building approach to energy efficiency in existing commercial and industrial buildings. Similar to performance contracting programs offered in other states, this Program will link incentives directly to energy savings and shall include a measurement and verification (M&V) component to ensure that the estimated savings levels are achieved. This market-based program will rely on a network of Program Partners, selected through a Request for Qualifications process. Once approved, Partners will then provide technical services to program participants. Partners are required to strictly follow program policy but will work under contract to owners, acting as their "energy expert". Partners will be required to develop an Energy Reduction Plan for each project. The Energy Reduction Plan includes the whole-building technical analysis component of a traditional energy audit along with a financial plan for funding the energy efficiency improvements and a construction schedule for installation. A set minimum energy reduction goal will be required of all projects and will be based on an approved whole-building energy simulation. The achievement of energy reduction goals will be verified using post-retrofit billing data and EPA Portfolio Manager methodology. For building types that are not addressed by EPA's Benchmarking Tool, an alternative approach based on the Leadership in Energy and Environmental Design Existing Building (LEED) method will be followed.

Target Market and Eligibility

Per the Energy Information Administration (EIA), commercial and industrial sector building energy use represents approximately 42% of the total energy consumption in New Jersey. The Pay for Performance Program offers a targeted approach for addressing the larger facilities within this sector.

The C&I Pay for Performance Program is open to existing commercial and industrial buildings with an average annual kW demand of more than 200 kW. In addition, any multifamily facility which does not meet the eligibility requirements of the New Jersey Clean Energy Home Performance Program will be eligible to participate in the Pay for Performance Program. Participants will be required to work with an approved Pay for Performance Partner to develop the Energy Reduction Plan and facilitate installation of the recommended package of energy efficiency improvements. In order to receive the full suite of incentives offered in the Pay for Performance Program, the submitted Energy Reduction Plan must include a package of energy efficiency measures that achieve the minimum performance threshold or Energy Target (i.e., ~~20~~15% of total building source energy consumption). In addition, the Energy Reduction Plan must include a comprehensive mix of measures: lighting cannot make up more than 50% of the total projected savings.

The 15% minimum energy reduction will be based on source energy, which is consistent with EPA's Portfolio Manager benchmarking software. ~~Units of energy comparison used in performance threshold calculations will be determined during the program design stage. Options include source energy (used in EPA benchmarking) and energy cost (used by ASHRAE 90.1 Section 1 and appendix G, EPAct Federal Tax Deductions, and LEED NC)~~. Pre-approval of the Energy Reduction Plan is required for all projects, which may include a site inspection. Projects that cannot identify efficiency improvements that meet the minimum performance level will be referred to the appropriate SmartStart Buildings Program(s). The Energy Reduction Plan will also include a metering ~~asurement and verification (M&V)~~ plan for all recommended measures.

The Pay for Performance Program will offer two types of incentives which will be disbursed upon satisfactory completion of three Program milestones. The first incentive type is related to completion of the Energy Reduction Plan. The second incentive type is performance-based and is related to the ~~i~~installation of ~~R~~recommended ~~M~~measures. The performance-based incentive will be paid out in two phases – the first at the completion of installation of the recommended measures, the second upon submittal of ~~an M&V~~Post Construction Benchmarking ~~r~~Report that verifies the level of savings achieved. These incentives are explained below in more detail.

Program Offerings and Incentives

TRC currently provides administration and inspection services for the New York State Energy Research and Development Authority's (NYSERDA) Commercial and Industrial Performance Program (CIPP) and Multifamily Performance Program (MPP). CIPP offers commercial and industrial customers various levels of incentives based on the complexity and comprehensiveness of their proposed project. MPP provides an innovative whole-building approach to addressing energy efficiency improvements in multifamily buildings, including a minimum performance threshold of 20% of the buildings total source energy use. TRC has applied the experience from these award-winning programs to the development of a similar approach for commercial and industrial buildings in New Jersey through the Pay for Performance Program.

The initial Pay for Performance Program roll-out will focus on developing a network of Program Partners who can provide the technical, financial, and construction-related services necessary for completing the Energy Reduction Plan. Energy Service Companies (ESCO) deliver this full range of services as part of their business model and will be a likely group to approach first. In addition, one of the goals of this program will be to expand the network of energy efficiency firms that can provide these services in order to make this Program accessible for smaller commercial and industrial customers. This market-based approach is a key component of market transformation by creating "green collar" jobs and helping to develop the workforce necessary to achieve ambitious long-term energy savings targets. Firms interested in becoming Program Partners will be required to submit case studies and resumes showing successful experience and expertise in C&I energy efficiency projects.

Program incentives will be performance-based and not specifically tied to the project cost or the recommended energy efficiency measures. Disassociating incentives from project cost is a key program design decision as it streamlines program administration by eliminating the collection of bid documents, construction contracts and change orders. This incentive structure also provides the benefit of allowing Program Partners to estimate and explain incentives to prospective participants as part of the program sales process. Estimated construction costs as included in the Energy Reduction Plan will be reviewed by TRC. Program incentives will be capped not to exceed 50% of the total estimated project cost.

Incentives, up to $1,000,000 per electric and $1,000,000 per gas utility account, ~~(to be finalized per the final approved program design)~~ will be released in phases upon satisfactory completion of each of three Program milestones, which are:

1. Submittal of a complete Energy Reduction Plan
    a. Incentive based on facility square footage at ~~approximately~~ $0.10/sq ft
    b. Maximum incentive of $50,000, minimum incentive of $5,000
    c. Projects that cannot identify efficiency improvements that meet the minimum performance level will be referred to the appropriate SmartStart Buildings Program.
    d. Incentive not to exceed 50% of facility annual energy cost.
    e. Incentive is contingent upon moving forward with construction.
2. Installation of all recommended measures per the Energy Reduction Plan
    a. Incentive based on ~~a percentage of total energy consumption (combined annual costs for electricity and natural gas)~~estimated level of savings in kWh and/or therms
3. Completion of ~~M&V Report~~Post Construction Benchmarking Report which reflects that the minimum performance threshold has been met or exceeded. This report will include verified consumption reductions based on one year of post construction energy use.

Incentive #1 – Energy Reduction Plan – This incentive will be developed to offset the cost of services associated with the development of the Energy Reduction Plan. This

incentive will be based on the square footage of the building(s) ~~and the complexity of the energy uses~~. TRC will analyze the relative complexity of conducting a whole building energy audit for various business types and develop a $/sq ft value for several types, as appropriate. ~~For example, the $/sq ft incentive value for completing an Energy Reduction Plan for an office building might be lower than the value for a hospital.~~ This incentive will also be capped ~~at a set~~50~~%~~ of annual energy cost. This incentive cap will assist in limiting incentives for facilities with large square footage but very low energy intensity (e.g. warehouses).

Incentive #2a – Installation of Recommended Measures – This incentive will be based on a projected energy savings and designed to pay approximately ~~one half~~60% of the total performance-based incentive. Pending final program design, a custom approach may be offered to large industrial customers whose annual energy costs are more heavily weighted to manufacturing processes. The preliminary performance-based incentives to be paid at completion of construction ~~(to be finalized per approved Program design)~~ are as follows (designed to be roughly 6~~5~~0% of the total performance-based incentive):

1. Electricity savings ~~at~~ from $0.1~~0~~1/kWh to $0.13/kWh based on % savings
2. Natural gas savings from~~at~~ $1.~~0~~10/therm to $1.45/therm based on % savings

Savings projections will be calculated using calibrated energy simulation. The approach involves the following steps:

1. Develop whole building energy simulation using approved simulation tools. The list of approved tools will be based on the software requirements outlined in ASHRAE 90.1 Section 11 or Appendix G.
2. Calibrate simulation to match pre-retrofit utility bills
3. Model proposed improvements to obtain projected energy savings
4. Calculate percent energy reduction to demonstrate achievement of Energy Target.

Modeling methodology will be in general compliance with national programs such as LEED and EPAct Federal Tax Deductions for Commercial Buildings, which will allow taking advantage of the expertise of a growing number of engineering and consulting firms involved in these programs.

Incentive #2b – Post Construction Benchmarking ~~M&V~~ Report – Upon submittal of ~~an~~ Post Construction Benchmarking ~~M&V~~ Report that verifies that the level of savings actually achieved by the installed measures meets or exceeds the minimum performance threshold, the performance-based incentive will be released. The preliminary performance-based incentives ~~(to be finalized per approved Program design)~~ are as follows (designed to be roughly 5~~0~~40% of the total performance-based incentive):

1. Annual electricity savings from~~at~~ $0.1~~0~~7/kWh to $0.09/kWh based on % savings
2. Annual natural gas savings from ~~at~~ $0.70/therm to $1.0~~0~~5/therm based on % savings

The ~~M&V~~Post Construction Benchmarking Report will be based on the approved ~~M&V plan as submitted as part of the~~ Energy Reduction Plan and will provide an accurate

verification of savings while keeping the costs associated with M&V at a reasonable level. Specifics of the M&V requirements~~Protocols~~ will be a critical component of the program and should be as simple as possible to reasonably verify savings while not overburdening the Partner or TRC. M&V ~~Protocols~~ requirements will follow the International Performance Measurement & Verification Protocol (IPMVP). Option ~~C~~D - ~~Whole Building~~Calibrated Simulation will be the required ~~would be the preferred~~ M&V approach for all projects. ~~but the Program will allow for~~ Options A – Partially Measured Retrofit Isolation and ~~,~~ B – Retrofit Isolation may be used as guidelines for data collection. ~~, and D – Calibrated Simulation, as necessary~~. The ~~M&V~~Post Construction Benchmarking Report must demonstrate savings over at least one year of post-construction consumption. The post-construction period may be extended to up to ~~two years~~eighteen months.

To validate the savings and achievement of the Energy Target, the EPA Portfolio Manager ~~may~~ will be used. For buildings not covered by EPA, the process used by LEED EB may be followed. The steps of this process are summarized below:

- Develop and document building energy baseline based on at least one full year of historical energy use data for the building. ~~A simplified approach would be to average together three consecutive years of historical energy use data immediately prior to building enrollment in the program and use it as baseline. Alternatively, statistics for similar building types may be included in the baseline development~~.

- Document annual energy use during the post-retrofit period. Collect energy consumption data for the 12-month post-installation period. ~~In certain cases, full year consumption may be extrapolated from partial data available.~~

- Calculate Percent Reduction of Source Energy Use as the difference between baseline and post-retrofit energy consumption as a percentage of the baseline energy consumption (baseline – post retrofit energy consumption / baseline).

Post-retrofit performance will be validated through site inspection, following the requirements of the EPA Guide for validating the ENERGY STAR label for commercial buildings.

Upon verified installation of all measures in the approved Energy Reduction Plan, ~~5~~60% of the total performance-based incentive will be released. The remaining ~~5~~40% of the performance-based incentive will be released upon completion of the ~~M&V~~Post Construction Benchmarking Report which reflects that the minimum performance threshold has been met or exceeded.

The incentives of $1,000,000 per electric and gas utility account would be increased to $2 million per meter for the following types of customers: hospitals, non profits, universities, and governmental entities not receiving Energy Efficiency and Conservation Block Grants (EECBG) and affordable multi-family customers ("affordable" is defined as low income, subsidized, HUD, etc.).

Existing program incentives for electric measures range from $0.18/kWh to $0.22 kWh based on savings. For natural gas measures, the program incentives range from $1.80 - $2.50/therm. For the customer class referenced in the preceding paragraph, if 20% minimum energy reduction can be achieved, they will be eligible for an additional incentive of $0.18/kWh and $1.80/therm. This incentive adder would be provided on a funding availability basis for applications **approved** by December 31, 2009. In addition to an approved application, the following documents are required by December 31, 2009:

1. Copy of executed contract between Partner and Participant
2. EPA Portfolio Manager "Statement of Energy Performance"
3. Identification of modeling software to be used in developing ERP

In addition, for this customer class, the not to exceed incentive cap will be increased from 50% to 80% of the total project cost. There will be no 200kW eligibility requirement so that smaller entities in this customer class can take advantage of a whole building approach to energy efficiency.

Advanced Measure Incentive – Combined Heat and Power

Under the Pay for Performance Program, participants will be eligible to receive additional financial incentives for Combined Heat and Power (CHP) installations to further enhance energy efficiency in their buildings through on-site power generation with recovery and productive use of waste heat, and reducing existing and new demands to the electric power grid. Energy reductions in kWh and therms associated with the CHP unit cannot be included in meeting the 15% minimum source energy reduction.

Buildings that are already energy efficient, as demonstrated by achieving the ENERGY STAR Building Label, may access the CHP incentives without participating in the Pay for Performance Program. In cases where the building is not eligible for the ENERGY STAR Building designation, the LEED EB approach will be used to determine eligibility, which is a building in the 25th percentile level above the national median.

By including CHP systems, participants will assist in reducing overall system peak demand, furthering the use of emerging technologies, reducing emissions and using distributed generation to provide reliability solutions for New Jersey. ~~The following paragraphs describe the guidelines and criteria related to the 2008 CHP Program. *The Pay for Performance Program is still under development and the guidelines below related to the 2008 CHP may be modified to reflect the intent and goals of the Pay for Performance Program.*~~

Equipment Eligibility

To qualify for the incentive, customers must install equipment that is sized to meet all or a portion of their on-site load. Only new commercially available permanently installed generating equipment qualifies for incentives. The following items do not qualify for a CHP Incentive: used, refurbished, temporary, pilot, demonstration or back-up generation.

The CHP System must achieve an average annual fuel efficiency of at least 60%, based on total energy input and total utilized energy output. Mechanical energy may be included in the efficiency evaluation.

Waste heat utilization systems or other mechanical recovery systems are required. Even though waste heat systems are produced with many configurations, they all perform the same task of capturing waste heat energy in the radiator or exhaust systems of a generator and delivering it to a heat load or cooling load. The captured energy is used in heating processes, such as water heating, pasteurizing, product preheating, etc. New electric generation equipment which captures waste heat or energy from existing systems is also allowed.

An on-site power system should have the ability to island/disconnect from the utility in the event of substantial grid congestion or failure.

Advanced Incentives for CHP Systems *(in addition to Pay for Performance Incentives)*

Incentives vary based on CHP technology, type, project size and total project cost. Table 1 summarizes the qualifying technologies and available incentives.

TABLE 1: CHP TECHNOLOGY AND INCENTIVE LEVELS

Eligible Technology[1]	**Incentive**[2] **($/Watt) (Up to $1.0 Million)**	**Maximum % of Project Cost**	**Minimum System Size**
Level 1 •Fuel cells not fueled by Class I renewable fuel	$4.00/Watt	60%	None
Level 2 •Microturbines •Internal Combustion Engines •Combustion Turbines	$1.00/Watt	30% [3]	None
Level 3 •Heat Recovery or Other Mechanical Recovery from Existing Equipment Utilizing New Electric Generation Equipment	$0.50/Watt	30%	None

[1] Insert New Jersey's code requirements or any other mandates if applicable to the appropriate technology.

[2] No one particular level will receive more than 50% of the funding, subject to review after 6 months

[3] The maximum % of project cost will go to 40% where a cooling application is used or included with the CHP system.

Since 2004, CHP incentives have been administered through a dedicated CHP Program. Each year the Program has expanded in scope and budget. Historically, there have been a number of projects (approximately 25%) that, due to various market conditions, have not been implemented. Overall market awareness of the program has increased significantly and the quantity of applications has increased annually.

The Market Manager has developed the 2009 Pay for Performance budget to include funding for CHP projects. The current 2009 Pay for Performance budget allocates $10 million toward CHP related projects. Pay for Performance projects that incorporate a CHP component will be eligible for additional incentive up to $1,000,000 per project. The CHP budget shown in Appendix B is to accrue funds for the previous year's CHP project incentives only.

CHP Warranty Requirements

Systems installed must be covered by a warranty of 5 years or a 5-year service contract.

Eligible CHP Project Costs

For the purpose of determining the maximum incentive payment, the following costs may be included in total eligible project cost:

- Combined Heat and Power equipment capital cost
- Engineering and design costs
- Construction and installation costs, including commissioning costs
- Engineering feasibility study costs
- Interconnection costs
- Permitting costs
- Up to 5 years warranty or service contract costs
- Fuel line installation costs, limited to the following:
    - Costs associated with installing or upgrading a fuel line.
    - Customer's cost for any evaluation, planning, design, and engineering costs related to enhancing/replacing the existing fuel service specifically required to serve the CHP equipment
- Air emission control equipment capital cost
- Primary heat recovery equipment, i.e. heat recovery equipment directly connected to the CHP system
- Heat recovery piping and controls necessary to interconnect primary heat recovery equipment to existing thermal load at the project Site

Not Eligible For CHP Incentives

The following types of generating systems/equipment are not eligible for the program:

- Back-Up Generators - systems intended for emergency or back-up generation purposes.
- Any system/equipment that uses diesel fuel, other types of oil and coal for continuous operation.
- Renewable fueled projects, including biodiesel and landfill gas, must be submitted through the CORE Program or other relevant renewable energy program under the CEP.

Guidelines for Projects that include CHP Systems

Prior to equipment installation:

- Participants must apply through the Pay for Performance program and submit the required Application Form and the appropriate Technical Worksheet to the Market Manager. In addition to complying with the guidelines established for Pay for Performance, Applications that also include CHP will be evaluated on the basis of the criteria listed below in Evaluation Guidelines. Upon review and approval of the Application, a commitment letter/letter of intent will be issued approving the eligibility of the system and reserving the incentive.
- The Pre-Installation Application Form must include information demonstrating that the proposed system will meet all applicable technical and certification requirements as specified in the Technical Worksheet.
- Applicants must allow inspection of eligible systems. The Market Manager will inspect 100% of the installations prior to issuing the incentive.
- A minimum of seventy-five percent (75%) of the incentive related to the CHP system will be paid upon project completion, review and acceptance of documentation and successful inspection. The remainder, up to 25% of the project incentive, will be paid one year after project inspection and acceptance and confirmation the project is achieving the proposed efficiency threshold. Applicant must provide twelve (12) months of operational data demonstrating the equipment achieves the efficiency levels that were originally proposed.
- Incentive dollars will be reserved based upon the date of the approved Pre-Installation Application Form;
- Funding will be reserved for 18 months from the date of the award letter; thereafter the Board, in conjunction with the Market Manager, may at its option cancel the funding. Any circumstances which will result in a delay past the 18-month timeframe must be reported to the Market Manager at least one month prior to the expiration of the funding award. Applicants must submit a request for extension in writing. The request must identify the reason for the request, and a schedule that identifies how much extra time is needed to complete the project. Requests for extensions may be granted for up to one year so long as applicant can demonstrate proof of significant project advancement. This could be in the form of copies of permits, equipment invoices, installation invoices indicating percentage complete, updated project schedules, etc. In addition, Market Manger reserves the right to conduct an inspection of the project to confirm project advancement. Approval of a request for extension will not change or modify any other program terms and conditions.
- Applicants **must** be contributors to the Societal Benefits Charge fund.

CHP Evaluation Guidelines

Projects will be evaluated utilizing the criteria established for under the Pay for Performance program and will based on a comprehensive, whole building approach to energy efficiency. As part of the evaluation of the CHP component of the overall project, the following criteria will be reviewed:

- System efficiency
- Environmental performance,
- Projected system startup date,
- Annual system utilization.
- Islanding capability
- General Programmatic Goals will be considered
- Project clarity

Project evaluations will take into consideration awarding funds to projects which are diversified in size, type of system, and type of end user. The following factors may also be considered:

- The Locational Marginal Price as determined by the PJM Interchange for the electric service area in which the project is located
- Inclusion of a project in an Emergency Management Center with islanding capability
- Location within the State's Smart Growth districts

Applicants will not be allowed to receive incentives for the installed generation equipment from other available NJ Board of Public Utilities, Office of Clean Energy funds.

Incentives will be awarded on a case-by-case basis. The Office of Clean Energy has the right to change/modify or discontinue the Advanced Incentive CHP component of the Pay for Performance Program without notice. The program will cease when commitments exhaust allocated funding.

Only CHP equipment installed on the customer side of the utility meter is eligible.

Equipment must be sized to serve all or a portion of the electrical load at the customer site.

Program Goals

The Pay for Performance Program goals and measures of effectiveness will include the following:

- **Market Transformation**: Expand the number of energy efficiency firms that offer comprehensive services. Promote the financial and environmental benefits of reducing energy consumption with emphasis on a comprehensive, whole-building approach.

Goal: Develop a list of at least 10-15 Program Partners that can offer the comprehensive energy services necessary for developing an Energy Reduction Plan.

- **Market Penetration/Cost Effectiveness**: Reach significant numbers of commercial and industrial customers with comprehensive, cost effective scopes of work.
  Goal: Approve at least 25 applications for the Program.
- **Energy Savings**: Maximize total energy (electric and gas) efficiency opportunities through the whole building approach.
  Goal: Approve at least 20 Energy Reduction Plans that meet the minimum threshold for energy savings. Approve at least 5 Energy Reduction Plans that include CHP systems.
- **Create Green Collar Jobs:** Expand the number of firms offering comprehensive energy services. Program orientation seminars and associated training opportunities will help to develop a network of Program Partners who can offer a full range of technical, financial, and construction-related services.

Program Deliverables

The Pay for Performance Program will provide the following services:

1. Develop a list of approximately 10-15 Program Partners that can offer Program services and publicize this list to potential participants.
2. Provide up to three (3) half-day Program Orientation seminars for Program Partners to introduce the Program and the Energy Reduction Plan development. The first Orientation will be promoted as a Program Launch event and will be open to Program Partners, potential Partners, and potential participants. OCE staff will also be invited.
3. Conduct Monthly Partner Conference Calls to present Program updates and discuss any issues that Partners may be encountering.
4. 100% Quality Control review of all submitted Energy Reduction Plans.
5. On-site inspections.

Quality Control Provisions:

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all Pay for Performance Program participants. All applications are reviewed upon receipt to verify adherence to eligibility requirements. Applicant eligibility information is verified, along with all technical information in support of energy efficient measure qualification and incentive calculation. Applicant supplied information and program administrator performed incentive calculations are entered into the database, and files are created for all documents and ongoing project correspondence. Pre and/or post inspections are conducted as required.

Quality Control for Projects that include CHP Systems
In addition to the Pay for Performance Quality Control provisions, projects that include CHP systems will be required to meet additional provisions. Each awarded project that includes CHP will be inspected by the Market Manager. A field inspection report will be prepared and kept in the project file for record purposes.

Upon completion of the project, the award recipient will submit documentation that the work is complete (i.e., As-Built Drawings, P and ID Drawings, if necessary) and certification that the project has been constructed in accordance with the accepted application. This may include, but not be limited to, the following:

- Review of documentation to support "Eligible Project costs" as defined above.
- Verification that the information stated in the application matches what was installed.
- Confirmation that the equipment is new and permanently installed and not used, refurbished, temporary, pilot or demonstration equipment.
- Confirmation that the installed system is covered by a warranty of 5 years or a 5 year service contract.
- Confirmation that the system does not use diesel fuel, other types of oil, or coal for continuous operation.

The Market Manager will review this documentation, and, in conjunction with the post installation inspection, will confirm the project has been installed per the specifications of the approved application as well as in line with all program requirements. A post inspection will be performed on 100% of projects which include CHP systems. The Market Manager may also request additional project information or documentation required to verify the project has met the program requirements based on the original application. If the program requirements have been met, the Market Manager will process a minimum of 75% of the incentive based on the approved project amount. The balance (up to 25%) of the incentive will be paid approximately one year after the initial project inspection, upon confirmation that the project is achieving the proposed efficiency threshold. Applicants must provide twelve (12) months of operational data demonstrating the equipment achieves the efficiency levels that were originally proposed. If required, TRC will provide a second post inspection at this time.

If the project has not been installed in accordance with the approved application, the Market Manager will review the project and assess the variances between the project as installed and as submitted. The Market Manager will request additional support documentation from the Applicant which may be helpful in evaluating the discrepancy. The Market Manager will review the discrepancies, perform a technical evaluation, and make a recommendation to the Program Coordinator and the OCE. Upon receiving approval of the recommendation, the Market Manager will notify the applicant and process the appropriate incentive.

Implementation Phase

- Program Administration —to include the following services:
    - Develop and conduct Program Orientations (up to 3)
    - Conduct monthly Partner conference calls
    - Provide technical assistance via email and telephone
    - Develop Frequently Asked Question (FAQ) posting on web site

- Provide interim Program Memos, as necessary, to clarify requirements
- 100% Quality Control review of all submitted Energy Reduction Plans
- 100% Project Inspections on first two projects for each Partner, at a minimum. Random inspections thereafter
- Program Management, including weekly, monthly, and annual reporting

- Program Incentives are $22 million

- External Evaluation – To be provided by the OCE's external evaluation vendor.

Schedule

This Program is expected to be available to the marketplace January, 2009. Program delivery will then take place over the course of one year.

Budget

A detailed budget for this program for 2009 is attached in Appendix C.

Attachment E

Local Government Energy Audit Program (LGEA Program)

Description:

The Program is designed to provide incentives to subsidize the cost of an energy audit for facilities owned by municipalities or other local government agencies (Agency) as well as New Jersey State Colleges and Universities. The Pprogram will be implemented as follows:

1. New Jersey Department of the Treasury has established, based on its review of the proposals that were received in response to its RFP, a list of qualified contractors that are available to contract directly with the participating A~~municipal or other local governmental a~~gencies to provide energy audit services. The list of contractors includes hourly rates for the provision of energy audit services.
2. The Agency will request proposals from contractors on the approved Treasury list. The solicitation will include a description of the facilities to be audited.
3. Contractors will provide the Agency an estimate of the cost to perform the energy audit based upon the hourly rates provided in response to the RFP. The estimate shall be on a fixed fee basis only. The estimate shall not be, in whole or in part, contingent on any other factors such as shared savings, commissions, or percentages of project costs.
4. The Agency will submit a request for reimbursement for a portion of the estimated cost of the energy audit to the Office of Clean Energy's C&I Market Manager, TRC. The Program may provide incentives in two phases. The Phase I incentive will ~~cover 75~~cover 75% of the audit fee. The Phase II incentive, covering 25% of the audit fee, will be provided upon installation of energy efficiency upgrades identified in the audit. In order to receive the Phase II audit fee, the net cost of the installation, after any New Jersey Clean Energy Program incentives, must be equal to or greater than 25% of the total audit fee.
5. The Market Manager will review requests for funding, including scope and cost, and issue incentive commitment letters to applicants that meet program requirements provided that sufficient funding remains available.
6. The Agency will contract directly with the firm they have selected to perform the energy audit.
7. Upon completion of the audit, the Market Manager will review the energy audit report and, provided that all program requirements are met, the Program will reimburse the Agency for a portion of the cost of the energy audit.

Participants in the Local Government Energy Audit Program will be able to take advantage of incentives available under existing New Jersey Clean Energy incentive programs to implement specific measures recommended in the energy audit.

The ~~Local Government Audit~~LGEA Program will provide incentives up to $3~~1~~00,000 per calendar year, per Agency to subsidize the cost of the energy audit. Incentives will be tiered and capped based on total facility square footage, as follows:

Tier	Incentive Cap
For all applications up to 750,000 square feet	$100,000
750,001 – 1,500,000 square feet	$150,000
1,500,001 – 2,000,000 square feet	$200,000
2,000,001 square feet and above	$300,000

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Target Markets & Eligibility

This program offers qualifying municipalities and other government agencies, including New Jersey State Colleges and Universities, incentives to subsidize the cost of having an energy audit of their facilities performed.

Goals and Energy Savings:

Goals:
Review and Process ~~400~~600 Audits (Audit = One Building).

Energy Savings:
Not applicable

Quality Control Provisions

Documented policies and procedures provide proper guidelines to ensure consistency in the processing and quality control for all ~~Local Government Energy Audit~~LGEA Program participants. All applications are reviewed upon receipt to verify adherence to eligibility requirements. Technical information in the energy audit is also verified. Applicant supplied information is entered into the database, and files are created for all documents and ongoing project correspondence. On a random basis, on-site facility inspections are also conducted to verify building and audit data.

Delivery Methods

The ~~Local Government Energy Audit~~LGEA Program will be managed by TRC as the C&I Market Manager. The Market Manager will work to ensure consistency in program design and implementation across the state.

Budget

The revised statewide budget for this program for 2009 is shown in Attachment F.~~attached in Appendix C.~~

Attachment F – Revised 2009 budget

Table 1 below shows the approved 2009 C&I Energy Efficiency Program budget. Table 2 shows the revised, proposed budget.

Table 1:

New Jersey's Clean Energy Program
C&I Energy Efficiency Program Reporting Categories
TRC's Approved 2009 Budget

Program	Total Budget	Admin.and Program Development	Sales, Marketing, Call Centers, Web Site	Training and Technical Support	Rebates, Grants and Other Direct Incentives	Rebate Processing, Inspections, Other Quality Control	Performance Incentives	Evaluation & Related Research
(All numbers 000's)								
COMMERCIAL & INDUSTRIAL EE PROGRAMS								
Commercial/Industrial Contruction								
C&I New Construction (includes P4P NC)	*$9,999*	*$323*		*$692*	*$8,475*	*$442*	*$67*	*$0*
C&I Retrofit	*$19,864*	*$823*		*$723*	*$16,315*	*$1,890*	*$113*	*$0*
CHP (prior years commitments only)	*$15,992*	*$37*		*$0*	*$15,914*	*$41*	*$0*	*$0*
New School Construction & Retrofit	*$6,747*	*$294*		*$572*	*$5,104*	*$717*	*$60*	*$0*
Local Government Energy Audit	$4,998	$55		$0	$4,098	$834	$11	$0
Direct Install	$10,189	$343		$10	$9,548	$225	$63	$0
Pay for Performance (includes CHP component)	$23,252	$340		$747	$21,903	$199	$63	$0
TEACH	$600	$48		$348	$162	$0	$0	$42
Marketing	$1,555		$1,555					
2009 Clean Energy Conference and Awards	$1,046		$1,046					
TOTAL C&I Programs	**$94,242**	**$2,263**	**$2,601**	**$3,092**	**$81,519**	**$4,348**	**$377**	**$42**

Table 2:

New Jersey's Clean Energy Program
C&I Energy Efficiency Program Reporting Categories
TRC's Proposed Revised 2009 Budget

Program	Total Budget	Admin.and Program Development	Sales, Marketing, Call Centers, Web Site	Training and Technical Support	Rebates, Grants and Other Direct Incentives	Rebate Processing, Inspections, Other Quality Control	Performance Incentives	Evaluation & Related Research
COMMERCIAL & INDUSTRIAL EE PROGRAMS								
Commercial/Industrial Contruction								
C&I New Construction (includes P4P NC)	$10,691,720.49	$323,000.00		$733,500.00	$8,924,552.53	$576,667.96	$134,000.00	$0.00
C&I Retrofit	$22,020,298.02	$823,000.00		$723,000.00	$18,191,283.52	$2,057,014.50	$226,000.00	$0.00
CHP (prior years commitments only)	$11,784,675.15	$0.00		$0.00	$11,743,720.54	$40,954.61	$0.00	$0.00
New School Construction & Retrofit	$7,103,223.98	$294,000.00		$572,000.00	$5,366,687.18	$750,536.80	$120,000.00	$0.00
Local Government Energy Audit	$13,276,120.00	$55,000.00		$0.00	$10,279,120.00	$2,920,000.00	$22,000.00	$0.00
Direct Install	$10,295,999.00	$343,000.00		$10,000.00	$9,591,999.00	$225,000.00	$126,000.00	$0.00
Pay for Performance (includes CHP component)	$23,245,128.08	$340,000.00		$814,000.00	$21,766,128.08	$199,000.00	$126,000.00	$0.00
TEACH	$795,600.00	$48,000.00		$532,416.00	$159,784.00	$0.00	$0.00	$55,400.00
Marketing	$1,555,000.00		$1,555,000.00					
2009 Clean Energy Conference and Awards	$1,046,000.40		$1,046,000.40					
TOTAL C&I Programs	**$101,813,765.12**	**$2,226,000.00**	**$2,601,000.40**	**$3,384,916.00**	**$86,023,274.85**	**$6,769,173.87**	**$754,000.00**	**$55,400.00**

The following is a summary description of the changes made to the budget shown in Table 2:

- All programs reflect the impact of carryover from 2008.
- Combined Heat & Power – Transfer $6,000,000 from incentives to the Local Government Energy Audit Program. In addition, there is no Administration and Program Development fee for 2009
- New School Construction & Retrofit – increase Rebate Processing, Inspections and Other Quality Control budget category to reflect an increase in QC inspections
- New Construction – Training and Technical Support and Rebate Processing, Inspections and Other Quality Control budget categories changed due to increases in partner training, modeling, audit reviews and QC inspections
- Retrofit – increased Rebate Processing, Inspections and Other Quality Control budget category due to increase in custom technical assistance and QC inspections
- Local Government Energy Audit – change in Rebate Processing, Inspections and Other Quality Control budget category to account for the increase in review, technical assistance, and inspection activities associated with an almost threefold increase in budget
- Pay for Performance – increase in Training and Technical Support budget category to train more Partners.
- TEACH – in addition to carryover, budget was reallocated between categories to more properly reflect activity
- Performance Incentive budget category – the approved budget of $377K was for 2009 performance incentives. This budget should have also included the commitment for the performance incentive for 2008. This change impacts the New Construction, Retrofit, Schools, Local Government Energy Audit, Direct Install and Pay for Performance line items.

The Rebates, Grants and Other Direct Incentives budget category was used to net out the changes described above.