Notice of Availability of Grants

New Jersey Board of Public Utilities
Availability of Grant Pursuant to American Recovery and Reinvestment Act

Dated May 19, 2011
Proposals Due: 5:00 P.M June 17, 2011

1. PROGRAM INFORMATION

1.1 Name of Program

State Entities – CHP Grant under the Innovation in Energy Efficiency and Renewable Energy – Public Entities

The New Jersey Board of Public Utilities ("BPU" or "Board") hereby announces the anticipated availability of grants (the "Grant" or "Grants") under the "Innovation in Energy Efficiency and Renewable Energy – Public Entities" Program (the "Program") as authorized under N.J.S.A. 26:2C-37 et seq. and 26: 2C.45 et seq.

1.2 Purpose

The Program is designed to provide grants from funding under the American Recovery and Reinvestment Act of 2009. Pub. L. No. 111-5 ("ARRA") to support energy project (the "Project") in the State of New Jersey (the "State") by State Department, State Agencies, State Authorities. State Colleges and State Universities (collectively, the "State Entities") that utilize innovative renewable or energy efficiency technologies or innovative applications for renewable energy applications and energy efficiency projects. Technologies that qualify for this Program include: wind energy, solar energy, biofuels, hydro energy, energy efficiency, geothermal, or energy storage applications that are used to reduce the intermittency of renewable energy technologies. This Program was approved by the Board on July 1, 2009 and reflects direction and input from the Governor's Task Force on ARRA. This specific program is directed solely to the energy efficiency technology known as Combined Heat and Power (CHP)

1.3 Goals

The Primary goals of this Program are to reduce the amount of greenhouse gases produced to meet the State's electricity needs, support the goals of the State's Energy Master Plan ("EMP") provide funds that will encourage the creation of green collar jobs in the State and further the goals of ARRA and the EMP. The EMP may be found at: http://nj.gov/emp/

1.4 Background

ARRA has invested $787 billion into the U.S. Economy including energy projects.

New Jersey's State Energy Program ("SEP") has received $73,643,000 from ARRA to support clean energy efforts in the State. The SEP which is administered by the BPU has historically been funded by grants received from the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy. The grants are used by states to advance their clean energy goals including renewable energy and energy efficiency programs.

The goals of the SEP are as follows:

- Increase energy efficiency to reduce energy costs and consumption for consumers, businesses and government.
- Reduce reliance on imported energy
- Improve the reliability of electricity and fuel supply and the delivery of energy services; and
- Reduce the impacts of energy production and use on the environment.

ARRA expands these traditional goals of the SEP by providing that ARRA funds should be used to:

- Stimulate the creation or retention of jobs:
- Save energy;
- Increase energy generation from renewable sources; and
- Reduce greenhouse gas emissions.

ARRA also give preference to activities that can be started and completed quickly.

A majority of New Jersey's anticipated share of the ARRA funds, $47 million is aimed at the private sector. These funds will be leveraged with private dollars in order to maximize the investment in energy efficiency, renewable energy projects and job creation.

Of the remaining ARRA funds, $20.643 million, will support State government's clean energy activities undertaken by the State Entities. State Entities have larges energy loads that can be extremely inefficient. That reality coupled with this funding represents an opportunity to realize significant energy savings. Such investments will reduce costs, save taxpayers money and create jobs.

This Solicitation pertains to the $3.6 million returned from EDA to the BPU ARRA and is designed to fund Grants for Projects by the State Entities. Please note that this Program was approved by the Board as a part of the State's ARRA application.

The USDOE permits the transfer of funds up to 10% of the total Federal grant amount, between programs. This transfer will maintain the CHP goals of the original program, but will go toward funding CHP projects for public entities only.

The Clean Energy Solutions ARRA CHP Program was originally set up to fund an EDA competitive grant program. Upon solicitation and subsequent awards, the program was fully funded and subscribed. Recently, a grant recipient dropped out of the program, resulting in the EDA Board returning ARRA funding in the amount of $3,783,394.00.

This request to transfer funding ($3,783,394.00) from the ARRA EDA Program entitled "Energy Efficiency with Clean Energy CHP" to the ARRA BPU Program entitled "Innovation in EE and RE – Public Entities".

2. GRANTS

2.1 Amount of Grants under the Program

The amount of funding by the federal government under the SEP has been expanded under ARRA. New Jersey's share of the total federal funding of $3.1 billion is $73,643,000.00. The BPU on behalf of the State submitted the initial application on March 23, 2009 and the complete application on May 12, 2009 for ARRA funding relating to the SEP.

The use of ARRA funding relating to the SEP must be consistent with the EMP, ARRA and SEP. Grants will be made to Projects based on their ability to further the State's energy policy goals. All of the details concerning application processes, selection methods, selected projects, and progress on Projects awarded Grants will be made publicly available on the State's Recovery website at http//www.nj.gov/recovery/

Of New Jersey's $73.6 million share of the SEP funds the application to the USDOE allocated $20.63 million to the BPU for this Program. BPU staff worked closely with the Governor's ARRA Task Force to develop this Program.

2.2 Entities which may apply for Grants under the Program

All State Department, State Agencies, State Authorities, State Colleges and State Universities are eligible for this Program

2.3 Qualifications for Projects

Projects must be able to be commenced expeditiously upon receipt of the Notice of Award Letter and execution of the Grant Agreement and must be able to begin construction within 3 months. CHP Projects must use an innovative technology (low NOx) or an innovative application of a technology that furthers the goals of the SEP. The Project must have the ability to create jobs and reduce greenhouse gas emissions. Total federal and state funding may not exceed 50% of the total project cost ("including" ARRA funding). Total State Entities ARRA CHP Program awards cannot exceed $5 million per generating plant ($450 per kW of installed electric generation). Aggregate federal and state funding may not exceed 50% of the total project cost, and applicants must provide evidence of source of funds to complete the project and ability to finance through market sources, which may include taxable or tax-exempt bond financing. Projects must enter commercial operation after January 1, 2011, and demonstrate ability to commence construction by September 30, 2011 and utilize committed project funds by April 30, 2012. <u>There will be no extension of this deadline.</u>

Projects involving CHP equipment must have an electric generating capacity greater than 1 MW. Projects involving upgrades of existing CHP equipment must have a net increase in generating capacity over 1 MW greater than original capacity (grant amount will be calculated based on the net increased generating capacity). CHP facility installation and upgrade projects, subject to the following:

- No program soft costs, such as research, feasibility studies, architectural or engineering services
- No equipment purchases, research and development, or demonstration project activities for technologies that are not commercially viable
- No building construction or purchases of land, a building, structure or any interest therein

The Dept of Treasury will execute disbursements for committed funds as invoices are submitted and validated by the New Jersey Board of Public Utilities (BPU). Payments will be based on meeting mutually agreed upon milestones, which may include equipment orders, equipment delivery, system installation and/or commencement of operation. There are three main payment streams as follows:

- At time company makes non-refundable deposit on equipment (up to 30% of amount awarded)
- Upon equipment delivery (up to 70% of amount awarded, not to exceed 90% of total amount awarded when combined with the prior disbursement)
- Upon system installation (award remainder)

PROGRAM DETAILS:

- The State Entities ARRA CHP Program is a $3.235 million competitive grant program supported by the Federal Stimulus/ARRA funds.

2.4 Grant Agreement

Applicants will be required to comply with Treasury Circular Letter (07-05-OMB) which provides some but not all of the terms and conditions that will be made part of the grant agreement. To download a copy of Circular Letter 07-05-OMB go to http//www.state.nj.us/infobank/circular/cir0705b.pdf.

All projects must be consistent with all Treasury circulars, regulations and statutes for procurement for equipment.

The funding under the Grant will be disbursed on a schedule set forth in the Grant Agreement.

2.5 Federal Requirements Under ARRA

ARRA requires that project funded under ARRA comply with various federal laws. These requirements are the following:

A. ARRA requires that funds provided under ARRA can only be used to "supplement" and not to "supplant" funds which should otherwise have been used to fund the Project being funded by the ARRA funding. "Supplanting" funds is loosely defined (for these purposes) as using federal grant money to "replace" or "take the place of existing local funding. The ARRA funds are

intended to provide entities with increased capabilities or to build capacity to address SEP programs. Therefore, ARRA grant funds cannot be used to replace existing funds for Projects. Instead the ARRA funds are intended to help increase capabilities. The funds are not to be used to supplant on-going or previously budgeted State activities, and may not be used to hire staff for operational activities or backfill.

B. A Project may not receive more than 100% of the costs of the Project from a Grant and from other State incentive and rebate programs. In the event that a Project would receive more than 100% from the Grant and these other State incentive and rebate programs the amount of the Grant will be reduced accordingly so that the total amount of funding from the Grant and these other sources do not exceed 100% of the cost of the Project.

C. The ARRA funded project are required to follow all normal Federal-aid funding requirement in addition, all ARRA funded project must include Davis-Bacon wage rates. In accordance with Federal law and the procurement laws of the Stat of New jersey any solicitation for service and resulting contract funded by federal money for SEP projects must contain the appropriate clauses setting forth the prevailing wages to be paid various classes of laborers and mechanics in compliance with the Davis-Bacon and related Acts. The State will ensure that projects funded directly or in part thorough funding from ARRA will include these clauses in both its solicitations for service and resulting contracts for contractors and subcontractors.

D. The wages paid in New Jersey must not be less that those prevailing wages on project of a similar character in the locality as determined by the Wage and Hour Division of the U.S. Department of Labor under the Davis-Bacon and related Acts. Established rates may be validated either through the U.S. Department of Labor or the Labor Standards Bureau webpage on the webpage for the New Jersey Department of Labor.

E. The Project will be required to follow the Buy American provisions set forth in ARRA.

2.6 Audit Requirement

The Grant will be covered by the audit requirements of the Department of the Treasury Circular Letter 04-04-OMB, Single Audit Policy for Recipients of Federal Grants, State Grants and State Aid. Reporting requirements will be specified in the Grant Agreement.

2.7 Reporting Requirements

President Obama has committed to transparency and accountability in the use of the funds provided through ARRA. It is important therefore that the activities carried out and the results achieved with those funds are tracked carefully and reported clearly and quantifiably. Pursuant to USDOE ARRA requirements for the SEP periodic performance metrics reporting will be required for program award recipients, which will include as appropriate jobs created energy (kwh/therms/gallons/BTUs/etc.) saved, renewable energy installed capacity and generated. GHG emissions reduced (CO2 equivalents) energy cost savings and funds leveraged. Specific reporting requirements applicable to this Program are currently being finalized in alignment with the Federal requirements. BPU will be the responsible party for reporting as the recognized SEP and primary grantee. Successful applicants through this Program will be obligated to follow a detailed schedule in reporting progress to comply with federal guidelines.

2.8 Progress Reporting and Metrics for Evaluation

Quarterly progress reports will be required.

3.0 INSTRUCTIONS FOR SUBMITTAL OF PROPOSALS

3.1 Date for Submission six (6) copies of the proposals along with a copy of the proposal on CD must be submitted and may be hand-delivered or delivered via US mail or Overnight to:

New Jersey Board of Public Utilities
44 So. Clinton Avenue
7th Floor
Trenton, NJ 08625
Attn: Edward E Mercer

Proposals should also be sent via email in PDF format to:

board secretary@bpu.state.nj.us

All proposals must be received by 5:00 p.m. on May 27, 2011. Please direct email inquiries to board secretary@bpu.state.nj.us . All inquiries and questions with regard to this Notice of Availability of Grants shall be submitted by 5:00 p.m. on May 13, 2011. Applicants shall receive a Notice of Award or letter declining such award.

3.2 Contents of Proposal

This section of the Solicitation is designed to guide applicants in organizing their proposals in a consistent fashion to facilitate evaluation.
Applicants should demonstrate within the relevant sections how their proposed Project meets or exceeds the goals and purposes identified above. Each proposal should include the following sections and must be in the order presented below:

3.2.1 Overall Summary. This section of the proposal must include the following:

a. Organization Name
b. Address
c. Contact Person (including email and phone number)
d. Project Name
e. Project Location
f. Total Project Cost
g. Grant Funding Amount Requested
h. Other Supplemental Funding Sources Anticipated (including amount already budgeted, use of federal or Clean Energy Program funding already committed or anticipated
i. Explanation of how the receipt of these funds will supplement not supplant your energy efficiency or renewable energy efforts

j. Description of Renewable Energy or Energy Efficiency Technology
k. Amount of Annual; Energy Savings or Energy Generation Anticipated from the Project
l. Amount of Annual cost Savings Anticipated from the Project
m. Number of Direct Jobs Anticipated to be Created from the Project (both temporary jobs and permanent jobs if applicable)
n. Amount of time needed to commence work on the Project once Notice of Award Letter is issued and a Grant Agreement executed
o. Amount of time needed to complete the Project after grant award (in weeks or months)
p. Location of Project
q. Anticipated permitting (e.g. New Jersey Department of Environmental Protection permits) required for Project completion
    i. All projects shall submit documentation that the NJDEP Permit Readiness Checklist and Permit Identification form (PIF) was completed and submitted to NJDEP for review. These forms are available from the NJDEP Office of Permit Coordination at www.state.nj.us/DEP/opppc/permitcoor.htm
r. Desired drawdown schedule for the Grant – indicate % of Grant desired to be disbursed at various time points or milestones

3.2.2 Project description totaling no more than five (5) pages. This description should include:

- What technology is being used[1]
- How this technology is innovative or an innovative application of renewable or energy efficiency technology and how this technology will be utilized in the Project
- The Project's objectives and goals
- How the Project helps to further the goals of the EMP
- How the Project is consistent with the goals of ARRA
- The procurement process that will be utilized to select the entity that will build the Project
- A detailed budget that clearly describes how the Grant funds from this Solicitation will be used. Please include all monies that will be dedicated to the Project including the source of funding for administrative costs.

In recognition of the lace of start-up capital available to public institutions applicants should discuss their funding (capital) needs in their application. The grant agreements will be structured to take into account capital limitations.

Please note: these Grant funds may not be used to cover administrative costs. Please see attached list which details prohibitions on expenditure for these Grant funds. The procurement process for obtaining the required contractors and subcontractors to carry about the Project must be described.

Certification – Applicants will be required to fill out the certification attached to this application which affirms that ARRA Grant funds will be used to supplement (add to) existing funds and will not supplant (replace) fund that have been locally allocated or the same purpose. Potential supplanting will be addressed in the proposal review as well as in the pre-award review, post award, monitoring and the audit.

[1] Examples of some potential technologies are: Project that use a combination of energy efficiency technology such as high efficiencies low NO_x combined heat and power.

3.2.3 Proposal Timeline – Proposals must include a "time-line" for undertaking the Project including projected dates for commencement of the Project and completion date.

3.2.4 Program Team

Proposals should include an organizational chart listing all team members, including the program manager and indicate how they will procure the necessary contractors and subcontractors to undertake the project. Proposals should also state the program team's individual and combined expertise that will enable successful implementation of the program.

4.0 REVIEW AND AWARD OF GRANTS

4.1 Evaluation Criteria

The review of the proposals will be performed by a Grant Evaluation Committee that consists of representatives from: the BPU, and the Office of Economic Growth, according to the following criteria:

- The Project's ability to commence work quickly and begin construction within three (3) months from the date of Notice of Award Letter and execution of the Grant Agreement
- The use of an innovative technology or an innovative applications of a technology that furthers the goals of the SEP
- The ability to create jobs.
- Reductions in greenhouse gas emissions
- The amount of energy created or saved

The Grant Evaluation Committee reserves the right to conduct interviews with applicants or request additional details and clarification if necessary. If a proposal is submitted by any of the agencies on the evaluation team that agency will not participate in the review of ranking of such proposal(s)

4.2 Grant Award

The Grant Evaluation Committee will recommend to the Board proposals based upon the review process described above. The Grant Evaluation Committee may recommend reducing the scope of the project and as a result, may recommend reducing the requested funding. The Board may reject or accept in part or in whole the recommendations for funding made by the Grant Evaluation Committee. Grant funds will be awarded by the Board to the Projects that are deemed most beneficial to the State according to the criteria contained herein. The Board reserves the right to make no award if in its sole discretion no acceptable proposal is received. The decisions of the Board will be communicated to applicants by the Office of the Secretary of the Board Applicants shall designate a Program Manager in the proposal who shall become the point of contact with the Office of the Secretary. Awards will be in the amount of 450 kw of installed electric generation (based on International Standards Organization "ISO" rating)

G. PROJECT TECHNICAL WORKSHEETS

The following includes the Technical Requirements, Instructions, and Terms and Conditions for Combined Heat & Power projects eligible under the ARRA CHP Grant Program. Before completing the forms and the related technical worksheets, please carefully read all of the information associated with A) Incentive Qualification Requirements, B) Instructions for Completing the Incentive Forms, and C) Important Terms and Conditions.

INCENTIVE QUALIFICATION REQUIREMENTS:

This is a Competitive Grant Solicitation. The EDA has the right to change/modify or discontinue the program without notice. The program will cease when commitments exhaust allocated funding.

1. The system must be installed in New Jersey. The applicant must serve a commercial, institutional, or industrial electricity customer in this State. Only CHP equipment installed on the customer side of the meter is eligible.
2. The project shall establish by contract or other arrangement that the electric output generated at a CHP facility shall, to the maximum extent feasible, be consumed at the project site by a facility located at the site and that any surplus power produced that is not needed by that facility may be sold into the interstate PJM grid.
3. The CHP Project shall have an electric generating capacity of greater than one MW for new equipment.
4. New installations are eligible for Incentives; expansions of an existing facility with new equipment are also eligible for incentives. However only the incremental expansion would be eligible for the incentive. CHP upgrades of existing CHP equipment shall have a net increased generating capacity over 1 MW greater than original capacity. All major equipment supplied will have a projected useful service life of 20 years.
5. Heat recovery or other mechanical energy recovery equipment used to generate electricity is eligible.
6. The project shall be designed to achieve thermal efficiency levels of at least 65 percent for facilities with up to 20 MW of electric generating capacity, and at least 70 percent for facilities with electric generating capacity greater than 20 MW. An existing facility that does not currently achieve the applicable thermal efficiency level shall be eligible to receive grants pursuant to this paragraph if new or expanded projects developed at the facility will achieve thermal efficiency levels of at least 65 percent for facilities with up to 20 MW of electric generating capacity, and at least 70 percent for facilities with electric generating capacity greater than 20 MW
7. The system must achieve annual system efficiency of at least 65%, based on total energy input and total utilized energy output. Mechanical energy may be included in the efficiency evaluation.
8. The system must have a warranty to be all-inclusive for at least 5 years. The cost of five year warranty may be considered as part of the cost of the project.
9. Incentives will not be processed without a Federal Tax Identification number, Proof of Purchase (receipt), and authorized signatures from the Applicant and Installer.

INSTRUCTIONS FOR COMPLETING THE INCENTIVE FORMS:

1. Complete all of Sections A through E of Form 1, all sections of the Technical worksheets (Forms 2, 3, 4, 4a, and 5), and a detailed feasibility analysis. **All information is necessary for processing applications and incentives.** Illegible or incomplete Application Forms and/or Technical Worksheets will be returned to the Applicant.
2. Deliver or mail 5 copies of the fully completed Application including all required information via CD ROM or USB flash drive.
3. Any changes between the initially proposed system and the installed system must be fully documented and are subject to EDA and BPU approval.
4. After the approved system is installed, the Applicant (or Installation Contractor) must submit the following to the EDA: a completed Notification of Commercial Operations – full scale system verification; proof of purchase; proof of warranty; completed W9 Taxpayer ID and certification form; a copy of the Electrical Code Inspection Certificate; and a completed Interconnection Application.

IMPORTANT TERMS AND CONDITIONS:

1. To receive an incentive, Applicant must agree to an inspection by the BPU, a BPU/EDA representative, or a BPU/EDA-designated contractor. The applicant must also agree to allow the BPU to monitor the facility's energy production to verify meeting efficiency requirements and energy production for grant performance payments. At a minimum metering for electric and thermal energy (steam or high temperature hot water) will be required.
2. The EDA reserves the right to modify or withdraw this program. Program procedures and incentive levels are subject to change or cancellation without notice. Approved projects will be honored under the terms stated in the grant document.

3. Installation must comply with the host utility's Interconnection Requirements, which are available from the respective electric utility. These include Operation/Disconnection Procedures, Liability/Indemnity and Insurance Requirements according to the size of the project.
4. All required permits must be properly obtained and posted.
5. Equipment must be commercially available and permanently installed. The following are **not eligible** for incentives: portable and emergency backup power systems, temporary, pilot, or demonstration equipment; systems that use petroleum diesel fuel, other types of petroleum oil or coal for continuous operation. Renewable fueled or waste fueled CHP projects are encouraged however applicant should consider specific incentives currently being developed under the BPU Clean Energy program.

FORM 1: BASIC REFERENCE INFORMATION

A. CUSTOMER INFORMATION:

Electric Utility: ☐ Atlantic City Electric ☐ Jersey Central Power & Light ☐ PSE&G ☐ Rockland Electric Company
Gas Utility: ☐ Elizabethtown Gas ☐ New Jersey Natural Gas ☐ PSE&G ☐ South Jersey Gas

Electric Utility Account Number: _____ Gas Utility Account Number: _____

Federal Tax I.D. Number: _____

First Name: _____ Last Name: _____

Company Name (if applicable): _____

Daytime Phone Number: _____ Email: _____

Installation Address: _____

City: _____ State: _____ Zip Code: _____

Mailing Address (if different from above): _____

City: _____ State: _____ Zip Code: _____

Will the Combined Heat and Power Project be used as an Emergency Management Facility? (Please check one): ☐ Yes
☐ No (If yes, please provide appropriate documentation.)

B. AWARD RECIPIENT - If Grant check is to be issued to a company other than above, issue Grant check to:

First Name: _____ Last Name: _____

Company Name (if applicable): _____

Daytime Phone Number: _____ Email: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Federal Tax I.D. Number: _____

Customer Signature: _____

C. CONTRACTOR/INSTALLER/DESIGN PROFESSIONAL - All fields must be completed:

First Name: _____ Last Name: _____

Company Name (if applicable): _____

Daytime Phone Number: _____ Email: _____

Address: _____

City: _____ State: _____ Zip Code: _____

D. EQUIPMENT INFORMATION:

Equipment Type:
☐ Boiler Steam Turbines ☐ Gas Engines ☐ Gas Turbines ☐ Heat Recovery Equipment ☐ Other

Manufacturer: _____ Model: _____

Installed Capacity (in kW, as calculated in the Technical Worksheets): _____

E. CUSTOMER AND INSTALLER INFORMATION:

The undersigned warrants, certifies and represents that as part of the design study requirement; 1) the information provided in this entire Form is true and correct to the best of my knowledge; 2) the Installer/Contractor will explain and provide manuals related to the system operation and maintenance to the customer (Applicant); and 3) the installation will meet all of the ARRA Combined Heat and Power Program requirements. This Application attachment form also requires the signature and certification of a NJ Licensed Professional Engineer.

Customer (Applicant)

Signature: _____

Print Name: _____

Date: _____

Contractor/Installer

Signature: _____

Print Name: _____

Date: _____

Design Professional Name: _____

Design Professional Signature: _____

NJ Professional Engineers License Number _____

ARRA Combined Heat & Power (CHP) Program

Technical Worksheets for CHP Equipment

Before completing the attached Technical Worksheets for the ARRA CHP Program, please carefully read all of the information in Sections A, B and C below.

A. INSTALLATION REQUIREMENTS:

Equipment installation must meet the following requirements in order to qualify for the ARRA Combined Heat and Power program:

1. A minimum overall system efficiency rating of 65% up to 20 MW and 70% greater than 20 MW based on total energy input and total energy output.
2. An expected completion date. The Applicant should submit documentation from manufacturers and contractors which state the expected equipment delivery and installation dates.
3. Equipment must be commercially available and permanently installed. The following are ***not eligible*** for incentives: portable and emergency backup power systems, temporary, pilot, or demonstration equipment; systems **that use petroleum diesel fuel, other types of petroleum oil or coal for continuous operation.**
4. The installation must comply with manufacturer's instructions.
5. The installation must comply with the interconnection and protection requirements of the local electric distribution company.
6. The installation must comply with provisions of these standards, as appropriate: NFPA 853 – Stationary Fuel Cell, and all codes governing the installation of Combined Heat and Power equipment; Power Plants, IEEE 519 – Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems; ANSI Z21.83-1998 Fuel Cell Power Plants, and input and output protection functions should be in compliance with ANSI C37.2 Device Function Number specifications.
7. The system should be equipped with the following capabilities, indicators and/or controls:
    - On/off control on site
    - Operating mode setting indication - parallel vs. stand-alone
    - AC & DC overcurrent protection or equivalent
    - Operating status indication
    - Remote control and data acquisition capable
    - Electric load-following capable
8. Warning labels must be posted on the control panels and junction boxes indicating that the circuits are energized by an alternate power source independent of utility-provided power.
9. All interconnecting wires must be copper. (Some provisions may be made for aluminum wiring; approval must be received from utility engineering departments prior to acceptance.)
10. All wiring splices must be contained in UL-approved workboxes.
11. Operating instructions must be posted on or near the system, or on file with facilities operation and maintenance documents.

Proposed changes to the requirements will be considered, but they must be documented by the Applicant or Installation Contractor and approved by EDA. These requirements are not all-encompassing and are intended only to address certain minimum safety and efficiency standards.

B. CODE REQUIREMENTS:

1. The installation must comply with the provisions of the National Electrical Code and all other applicable local, state, and federal codes or practices.
2. All required permits must be properly obtained and posted. (e.g., . Title V)
3. All required inspections must be performed (i.e., Electrical/NEC, Local Building Codes Enforcement Office, etc.).

In order to ensure compliance with provisions of the NEC, an inspection by a state-licensed electrical inspector is mandatory.

C. INSTRUCTIONS:

The information below must be supplied in the detailed feasibility analysis. Provide a brief narrative describing the facility and the project including (but not limited to) the following.

<u>System Type and Mode of Operation:</u>

Grid-connected Operating mode (parallel/capable of synchronizing with the electric grid; capable of automatically reducing load to prevent backfeeding the meter)

1. Grid-connected/grid-independent operating mode (parallel/capable of synchronizing with the electric grid and capable of switching automatically to independent, load-following operation when the grid is unavailable; automatic operation and synchronization of multiple power plants connected in parallel)
2. Stand-alone load-following operation (system confined to an independent circuit, no utility backup)
3. Battery interactive capabilities, if applicable

ARRA Combined Heat & Power (CHP) Program

Technical Worksheets for CHP Equipment

C. INSTRUCTIONS (continued from previous page)

System Information:

1. Complete Form #2 in its entirety.
2. The type and rating of the prime mover and an energy balance around the prime mover. The energy balance must be applied to a schematic of the system showing all major components, including the uses for the recovered heat. Annual totals for each energy input/output must be shown along with maximum, minimum, and average instantaneous values. Temperatures for each waste heat transfer fluid and sink must also be indicated.
3. Fuel conversion efficiency (FCE) for the prime movers must be provided. FCE is defined as the ratio expressed as a percentage of the total usable energy produced by a technology to the sum of all fuel or other energy inputs to the technology measured at each fuel's higher heating value.
4. The description of the proposed system must include a floor plan indicating equipment location and tie-in to existing building systems. Any structural modifications must be included in the capital cost of the system. This document must indicate the location of the Combined Heat and Power system, batteries (if any), lockable disconnect switch (unless otherwise approved by the electric utility, the disconnect switch shall be installed at the electric utility meter location), and point of connection with the utility system. The installation address, current account number at that address (gas and electric), and the installer's name and telephone number must also be included on the site map.
5. The pressure and availability of gas must be described in the study.
6. An operational sequence must be included that specifies the control system to be used along with a discussion of its integration with other on-site controls systems and who will have the responsibility for system operation.
7. A construction schedule that includes engineering, permitting, construction, start-up and commissioning must be provided.

Economic Evaluation: Complete Form 4 and Form 4a in their entirety

CHP System Economic Evaluation Requirements:

Simple payback, 10 year cash flow analyses, and IRR analysis are required for purposes of this Application Attachment. Although the format of these analyses is at the discretion of the applicant, the following inputs must be considered and shown within these analyses:

1. Total CHP system capital cost (from Form 4)
2. CHP system operating hours, load factor, and availability factor
3. Total service and maintenance costs (from Form 4a)
4. CHP system heat rate/ fuel consumption
5. Efficiency of current boiler plant, chiller plant, etc. for which recovered waste heat will supplement.
6. Clearly state energy savings or increased use of energy; and the demand savings. The savings, or the increase, should be stated in terms of KW, kWh and in MMBtu.
7. Fuel cost – commodity and delivery
8. Offset electricity quantity and value – customer charge, demand charge, commodity charge, TOU where applicable, any unavoidable charges
9. Offset thermal energy quantity and value – commodity and delivery
10. Changes to tariffs due to CHP, including supplemental electricity tariffs, standby rates
11. Fuel and electricity escalation rates for cash flow analysis
12. Financing options and assumptions, such as the discount rate and interest rate for cash flow analysis
13. Any additional costs or credits, including incentives, the value of reliability, emission credits, HVAC equipment offsets

Tariff Impacts and Interconnections:

1. In addition to inclusion in the economic analysis described above, a detailed description of the relationship between the proposed CHP facility and the customer's existing energy tariffs must be included. Contract dates and dates of potential tariff rule changes must be included. In the case where such future changes would significantly impact the economics of the project, sensitivity analysis must be presented assuming the potential tariff or contract changes occurred.
2. Site-specific grid interconnection issues and costs must be discussed. A brief, clear plan for if and how the system will be properly interconnected to the grid and/or natural gas pipelines must be presented.

Permitting:

1. A brief description of the necessary environmental and building permits or certificates that the customer needs to obtain must be provided. The permit determination should be based on a detailed emissions inventory developed from the hourly spreadsheet based model. A schedule of realistic permit receipt dates must be included in the schedule described above.

System Reliability and Availability:

1. The reliability and availability of the CHP system must be quantified (e.g. number of hours the system would be available at less than full capacity).

Supporting Documentation Should Include the Following:

1. Self-generation and waste heat recovery equipment specifications
2. New and existing facility equipment (both thermal and electric) annual operating schedules
3. At least twelve months of the most recent electric bill(s) for the facility served by the CHP system
4. At least twelve months of the most recent bills for natural gas, fuel oil and/or other fuels used in the facility served by the CHP system.

If you plan to use an absorption chiller to offset cooling load, provide cooling load calculations.

FORM 2: PROPOSED CHP SYSTEM PERFORMANCE

With the help of your installation contractor, fully complete the technical worksheets for CHP equipment.

Proposed System overview (Annual)

Prime Mover Type		
Energy Input	(MMBtu)	
Electric Output	(kWh)	
	(MMBtu)	
Recoverable Thermal Output	(MMBtu)	
Utilized Thermal Output[1]	(MMBtu)	
Annual System Efficiency[2]	(%)	

1 kWh = 0.003412 MMBtu

Rated System Information

Prime Mover Model Info		
Energy Input	(MMBtu)	
Rated Electric Output	(kW)	
	(MMBtu/h)	
Total Thermal Output	(MMBtu/h)	
Recoverable Thermal Output	(MMBtu/h)	
Fuel Conversion Efficiency[3]	(%)	

1 – Heat used from the CHP systems for the purpose of heating and cooling
2 – Annual System efficiency = (Electric output + Utilized Thermal Output)/Energy Input
3 – Fuel Conversion Efficiency = (Rated Electric output + Recoverable Thermal Output)/Energy Input

Proposed System Overview

Month	Anticipated operating hours	Input Fuel (MMBtu)	Output Electricity (MMBtu)	Recoverable Thermal output (MMBtu)	Utilized Thermal output	Electric Efficiency (%)	Thermal Efficiency (%)	Annual Efficiency (%)
Jan								
Feb								
Mar								
Apr								
May								
Jun								
Jul								
Aug								
Sep								
Oct								
Nov								
Dec								
Total								

Breakdown of Recovered Thermal Output (Indicate in the detailed feasibility analysis the fuels that are being displaced and the respective equipment efficiency)

Month	Process Heating (MMBtu)	Process Cooling (MMBtu)	Space Heating (MMBtu)	Space Cooling (MMBtu)	Domestic Hot Water (MMBtu)	Other	Total (MMBtu)
Jan							
Feb							
Mar							
Apr							
May							
Jun							
Jul							
Aug							
Sep							
Oct							
Nov							
Dec							
Total							

Unit Cost of Gas		
Unit Cost of Electricity		
Rate Schedule	Electricity	
	Gas	

FORM 3: AIR EMISSIONS DATA

With the help of your Installation Contractor, fully complete the Technical Worksheets for CHP Equipment.

This form reports anticipated annual emissions of the six (6) pollutants due to the CHP System. The first table should include vendor supplied data on the emissions from the prime mover to be installed. The second two sections will show what fraction of those new emissions is displacing current system emissions.

Yearly Grid Supplied Electricity (Pre-Installation) (MWh/year)	
Yearly CHP System Supplied Electricity (MWh/year)	
Yearly Grid Supplied Electricity (Post-Installation) (MWh/year)	

Vendor Supplied CHP System Emissions

NOx		lbs/MWh
SOx		lbs/MWh
PM-10		lbs/MWh
CO2		lbs/MWh
CO		lbs/MWh
VOC		lbs/MWh

Estimates of "Displaced" Emissions

The following two tables should be completed if data or information exists. By reporting on the emissions of the facility both before and after installation of the CHP system, the net impact of the new system can be estimated. If insufficient data exists, leave the tables blank. For systems greater than 2 MW, both tables must be completed prior to the release of the committed incentive.

Calculated Annual Boiler/Furnace Emissions (lbs)

	Pre-CHP Installation	Post Installation D	Difference
NOx			
SOx			
PM-10			
CO2			
CO			
VOC			

Annual Site Emissions (lbs)

	Pre-CHP Installation	Post Installation D	Difference
NOx			
SOx			
PM-10			
CO2			
CO			
VOC			

FORM 4: CHP SYSTEMS COST TABLE

With the help of your Installation Contractor, fully complete the Technical Worksheets for CHP Equipment.

Directions: Please enter all CHP system capital costs in the table below. Break out costs should add up to total CHP system turnkey cost. Turnkey line item costs should include any administrative and markup costs. Where a component or construction cost is not included in CHP project design enter "N/A." Where a component or construction cost is provided within another line item, please enter "included."

CHP System Component Cost	($)
Prime Mover	
Fuel Compressor	
Black Start Capability	
Generator	
Heat Recovery	
Cooling Tower or other Heat Dump	
Absorption Chiller	
Desiccant	
Controls	
Sound Attenuation	
Inlet Air Handling	
Vibration Isolation	
Emission Controls	

Design/Construction/Labor and Materials Cost	($)
Engineering	
Site Preparation	
Buildings	
Construction Labor	
Materials	
Exhaust Stack	
Electrical Tie-in	
Mechanical Tie-in	
Grid Interconnection Devices	
Permitting Fees	
Contingency	

Total CHP System Turnkey Cost	

FORM 4a: CHP SYSTEM SERVICE AND MAINTENANCE COSTS

With the help of your Installation Contractor, fully complete the Technical Worksheets for CHP Equipment.

Directions: Please enter annual costs for system service and maintenance, including parts, labor and all major equipment overhauls. Include fixed costs for extended service warranty where applicable. If multiple rows are included in a fixed maintenance cost, please enter "included" or N/A in that row as applicable.

	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10
Prime Mover/Heat Recovery										
Thermal Equipment										
Emissions Control										
Remote Monitoring/Control										
Warranty/Service Contracts										
Total Service/Maintenance Costs										

FORM 5: INCENTIVE REQUEST CALCULATION

Total system rated Electric Capacity AC Kilowatts._____

Note: Total federal and state funding may not exceed 50% of the total project cost (including ARRA funding). The applicant may qualify for other financial assistance through BPU and or other State or federal programs.

It is the sole responsibility of the applicant to produce and submit project specific calculations.

Incentive Calculations

1. CHP with generation less than or equal to 20 MW Electric Capacity (minimum 65% combined electrical and thermal efficiency)
2. CHP with generation greater than 20 MW Electric Capacity (minimum 70% combined electrical and thermal efficiency)

- Combustion Turbine Electric Capacity (KW) = ISO Power rating x 0.93 _____KW
- Internal Combustion Engine Electric Capacity (KW) = Continuous Duty Rating x .96 _____KW

- Grant total amount ($) = Electric Capacity kw x $450/kw $_____

I hereby submit that all of the provided information is true to the best of my knowledge.

Customer Name: _____

Customer Signature: _____

I hereby submit that all of the provided information is true to the best of my knowledge.

Design Professional Name: _____

Design Professional Signature: _____

NJ Professional Engineers License Number _____

ATTACHMENT A – ARRA Grant Program
Non-Supplanting Certification

This certification which is a required component of the proposal affirms that ARRA grant funds will be used to **supplement** (add to) existing funds, and will not **supplant** (replace) funds that have been appropriated for the same purpose. Potential supplanting will be addressed in the proposal review as well as in the pre-award review, post award monitoring, and the audit. Applicants and/or grantees may be required to supply documentation certifying that a reduction in non-federal resources occurred for reasons OTHER than the receipt or expected federal ARRA grant funds.

Supplanting funds is loosely defined (for these purposes) as using federal grant money to "replace" or "take the place of" existing local funding. The ARRA grant funds are intended to provide entities with increased capabilities or to build capacity to address SEP programs. ARRA grant funds **cannot** be sued to replace funds for existing State programs. They must be used only to help increase capabilities. The ARRA grant funds are not to be used for replacing (supplanting) routine budget expenses. Funding may not be used to supplant on-going or previously budgeted State activities and may not be used to hire staff for operational activities or backfill.

As a condition of the receipt of these funds:

Funding may be suspended or terminated for filing a false certification in the proposal, grant agreement or any other reports or documents required as part of this Program.

Certification Statement:

I certify that any funds awarded under this ARRA Grant Program will not be used to supplement existing funds for program activities, and will not replace (supplant) non- Federal Funds.

_____	_____
NAME (AUTHORIZING OFFICIAL)	SIGNATURE
_____	_____
NAME (PROGRAM MANAGER/CONTACT	SIGNATURE
_____	_____
NAME (CHIEF FISCAL OFFICER)	SIGNATURE
_____	_____
JURISDICTION	DATE

ATTACHMENT B- PROHIBITIONS

States are prohibited from using SEP financial assistance for the following purposes:

- For construction such as construction of mass transit systems and exclusive bus lanes or for the construction or repair of building or structures.
- To purchase land, a building or structure or any interest therein
- To subsidize fare for public transportation
- To subsidize utility rate demonstrations or State tax credits for energy conservation or renewable energy measure; or to conduct or purchase equipment to conduct research development or demonstration of energy efficiency or renewable energy techniques and technologies not commercial available.

Certification Statement:

I certify that any funds awarded under this ARRA Grant Program will not be used for any of the purposes described above.

_____	_____
NAME (AUTHORIZING OFFICIAL)	SIGNATURE
_____	_____
NAME (PROGRAM MANAGER/CONTACT	SIGNATURE
_____	_____
NAME (CHIEF FISCAL OFFICER)	SIGNATURE
_____	_____
JURISDICTION	DATE