

## Combined Heat and Power (CHP) Long Term Financing Incentive Mechanism A “smart” Portfolio Standard

**Goal:** To develop a long term secure and stable funding/financing source to implement the 2011 Energy Master Plan CHP target of 1500 MW that includes both storm response CHP and dual economic and environmental benefit CHP.

**Objectives:** Develop CHP as part of the State’s long term strategies for economic development.  
Develop a near term CHP storm response program for critical public facilities.  
Develop a non-lapsable funding source  
No new certificate trading programs

**The specifics of a long term financing mechanism would be established in detail through a stakeholder process the following is an initial straw for initial discussion purposes only.**

As set forth at NJSA 48:3-87 g and h, the Board currently has the statutory authority to adopt, pursuant to the Administrative Procedures Act, an energy efficiency portfolio standard (EEPS) includes both an electric energy efficiency portfolio standard (EEEEPS) and a gas portfolio energy efficiency standard (GEEPS). As defined in the statute, the EEEPS and the GEEPS targets may be up to 20% below the electric or gas usage projected by the Board in 2020 without the EEEPS or the GEEPS. As provided in the statutes, the EEEPS would be set on the electric public utility (electric distribution companies EDC) to establish energy efficiency (EE) measures to reduce the electric usage.. The GEEPS would be set on the gas public utilities (gas distribution companies GDC) to establish EE measures to reduce the gas usage for heating.

An EEPS, as defined in the statutes, means a requirement to procure a specific amount of EE or demand side management resources as a means of reducing energy usage and demand by customers.

CHP is an energy efficiency measure. CHP, in addition to providing onsite generation of electricity, saves electricity through more efficient cooling equipment and processes; and saves gas through more efficient heating/cooling equipment and processes. The CHP can be developed as an EEEPS or a GEEPS or both as a CHP PS. The CHP PS simply takes the EMP goal for CHP and establishes it as a specific regulatory requirement.

The CHP PS would differ significantly from the current renewable energy portfolio standard (RPS). By directing the CHP PS to the utilities as set forth in the statutes to procure the PS obligation eliminates the need for a number of the provisions in the current RPS rules such as the alternate compliance payment (ACP) structure and penalties. The ACP structure and penalties are required because the current solar, Class I and Class II RPS is an obligation on the electric suppliers and basis generator providers and is a market-based structure.

The ACP is not a penalty. The ACP provides another means of compliance in a competitive market requirement structure. The ACP acts as a safety value in undersupplied market and is also available to prevent market manipulation by the renewable energy customer generators, marketers or aggregators. The Board, in terms of the EEPS, would directly regulate the utilities. These other mechanisms in the RPS can be built directly into the regulatory oversight of the utilities. The Board does not directly economically regulate the suppliers and providers, which is the reason for the ACP and penalties for non-compliance.

By directly regulating the electric and gas utilities under the EEPS provisions there would be no need for any additional incentives or penalties for the utilities to perform as required by the Board. The CHP PS provisions would include the ability of the utilities to recover their cost as currently provided for in the statutes and regulations, but eliminates the other provisions as required in a competitive RPS marketplace. The structure for recovery would be built into the overall EEPS regulatory structure.

As similar to the RPS the CHP PS would be set statewide annually as a percentage of the CHP EMP goal through energy year 2021. This annual statewide CHP percentage would be an obligation on the individual utilities based on annual retail sales of gas or electric and other factors which may include market conditions and supply and demand.

The main goal of the CHP PS is to develop and secure a stable and long term funding source for CHP that is not lapsable to the general funds. The CHP PS would be a long term financing incentive similar to the RPS structures. This long term CHP financing structure would be a “**smart**” portfolio standard. The CHP PS requirement would not be static requirement as in the solar, Class I and Class II RPS. In the RPS case, while the Class I and Class II RPS increases annually through 2021, to change the individual annual RPS, once it is set in rules requires rulemaking. In the case of solar which is set through 2028 it requires legislative action to decrease the RPS and can be increased through regulations. The CHP PS requirement would be a dynamic standard that responds and changes based on market conditions. The criteria for this change would be set as part of the CHP PS Order or rulemaking. Basically it would respond to market demand, overall system costs, overall environmental and energy benefits and overall economic condition to a cap and down to a floor.

Having a portfolio standard that does not change is required and workable in a competitive market like in the solar, Class I and Class II markets. However, in a relatively closed market like CHP it does not make economic sense to have a standard that does not respond to changing market conditions. The CHP capacity would float in terms of CHP supply and demand, costs, environmental/energy benefits and economic factors. These criteria would be designed into the Board’s Order establishing the CHP PS requirement/program and the CHP PS rules. The Board

could revise through its Order the CHP- PS on a going forward basis. The Board would direct the utilities to submit a CHP PS compliance filing consistent with its Order and regulations. The CHP-PS would not be a filing pursuant to N.J.S.A 48:3-98.1 (RGGI filings). The utility CHP annual compliance filing would be based on the CHP-PS requirements established by the Board.

An increasing CHP system demand by customers could increase the CHP-capacity PS up to an annual capacity and cost cap. Likewise decreasing CHP system demand by customers would lower the CHP-PS capacity to a floor value. In addition, if the unit costs for a CHP system were decreasing the CHP capacity could increase to a capacity and cost cap and decrease to a floor if the overall cost for a CHP system were increasing. Likewise as the environmental or energy benefits decreased the CHP capacity could decrease and would increase the CHP capacity if the benefits increased. The Board, through establishment of the criteria for the increase and decrease, would essential regulate this regulated market. This method would minimize the up and down cycles of the market like in the solar market. The CHP PS would develop and implement the most cost effective amount of CHP at the time.

Basically this process of a more directly managed CHP PS would minimize or eliminate the vertical demand curve that impacts the RPS competitive markets in New Jersey. Competitive market based RPS system could result in big swings in the value of the certificates because of market responses to supply and demand. Because of the tens of thousands of potential customers in the solar market, the Solar certificate value changes can be addressed more readily through market forces. Because of the limited number of customers currently in the CHP field this market would benefit initially through a more managed market. This regulated management could change with the implementation of cost effective micro-CHP. At that point the CHP PS market could look more like a solar market for residential and small business market segments.

The CHP long term financing incentives would be limited and specific to new CHP only. The facility would have to generate both electric and useful thermal energy. The PS would define new electric energy and useful thermal energy from the new CHP systems. The CHP long term financing for the electrical EE would have to be more efficient both in terms of the electric energy generated onsite vs. the electricity purchased and the useful thermal energy would have to be more efficient than the central air conditioning it is replacing. In terms of the CHP long term financing for the gas EE, the useful thermal energy would have to be more efficient that the gas heating equipment it is replacing. In addition there would be a requirement for a additional percentage of efficiency above building energy codes. The CHP PS would not include the additional gas used to generate the electricity.

There would be two components to the CHP PS - long term financing structure: one for public critical facilities and another for private sector facilities with dual environmental and economic benefits. Because of the need to immediately address a response to Sandy, the Board could develop the CHP long term financing structure for public critical facilities and then based on experience of the initial program, the private sector component could be added. A public critical facility would be defined as a public facility that could operate 24/7 and either temporarily or long term house, feed and shelter evacuated victims from an emergency such as super storm Sandy.

While the EEPS for CHP could be on both the electric and gas utilities for the more efficient cooling and heating equipment it would be more effective and less confusing to initially address the CHP PS through one - the gas utilities. This current straw for long term CHP financial assistance would be to finance 100 percent of the CHP project through the EEPS obligation on the natural gas utilities. This would be through direct upfront financing by the utilities as a loan. The CHP PS would be a larger version of on the bill financing.

In the direct financing option a portion of the financing would be paid back to the utilities and to the ratepayer over time based on the positive cash flow from the energy saving of the project. This payback period could be limited to a set timeframe. A portion of the direct financing would be forgiven based on performance of the system over time. This performance incentive can be determined upfront in the process or after the end of the payback period.

Initially a feasibility study of the potential project could be performed either funded by the NJCEP or through some other mechanism such as through the state universities. A detailed engineering cost benefit analysis would be required of each project to be financed to document compliance with the payback period and positive cash flow requirements.

While the authority to develop this CHP PS will be through the EEPS provisions in EDECA, this new structure would be developed similar to the EDC SREC financing programs as opposed to the solar, Class I and Class II RPS structure. The natural gas utilities would solicit CHP projects from the public on a set and routine schedule- once every 6 months or once a quarter. Based on the responses to the solicitation the gas utility would select the most cost effective projects that meet the public critical facility criteria and up to their annual CHP PS limit.

The initial gas utility CHP compliance filing could provide for a long plan to achieve the CHP PS over several years. The subsequent gas utility annual CHP compliance filing approval could adjust the CHP-PS based on review of the criteria as established by the Board. The filing would not be RGGI filing.

The NJCEP rebate/grant structure would stay in place until the CHP long term financing is developed, implemented and available. The current NJCEP rebate/grant structure would transition to the new long term PS financing structure as they are developed. The incentive payment would transition from an up-front rebate/grant to a financing incentive either funded upfront or over time based on performance of electricity generated and energy saved. Moving to a performance based system allows for a more efficient payment of incentives over time.

Through a stakeholder process, the details of the CHP PS- long term financing structure criteria could be developed including but not limited to the following:

1. The eligible technologies and eligible fuel types;
2. The percentage of the facility installation cost covered by the financing incentive;
3. Initial financing or performance payments over time;
4. The cap on the size of the facilities;
5. The definition of public critical facilities;
6. The length of time for repaying the financing
7. The size of the incentive;

8. The value of the incentive (\$/MWh)
9. The criteria to annually revise the CHP capacity requirements including:
  - a. Market supply and demand;
  - b. Environmental and energy benefits;
  - c. Overall system costs; and
  - d. Statewide economic conditions.

In order to keep the rate impact for CHP projects neutral, a reduction in the overall Utility E3 and NJCEP SBC cost would be a part of the overall design of a CHP PS long term financing program. As the long term financing structure were developed and implemented the direct utility E3 CHP or NJCEP CHP rebate budgets would be reduced by an equivalent increment. This would result in a reduction of the E3 rate or the SBC rate to insure the net cost to the ratepayer over the same period were, at a minimum, a net zero sum gain. Basically this would result in adding no new cost to the ratepayer. .

### Other Financing Options for Discussion

Another option for discussion for large scale private facilities is the SBC Credit program. This program has been approved by the Board and could provide up to 50% of the customers SBC funds that they pay in annually up to 50% of the cost. This would be limited to large scale (greater than 1 MW) for private sector facilities that document both environmental and economic benefits. This could include both CHP and fuel cell without heat recovery. . The SBC payment is after the facility is constructed and after payments of the SBC funds. The program rules for the SBC Credit program are attached.

Two other public financing options include:

Pool bond financing through the Environmental Infrastructure Trust with NJDEP. This would be limited to large scale projects at water and wastewater treatment facilities; and  
Pool bond financing through the Counties using the allocation of Qualified Energy Conservation Bonds (QECCB). This would be smaller scale public projects.