



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
AIR AND RADIATION

October 19, 2009

SEP Comments
NYSERDA
17 Columbia Circle
Albany, NY 12203-6399

Dear Governor Paterson:

The US Environmental Protection Agency (EPA) Combined Heat and Power Partnership (Partnership) appreciates the opportunity to comment on the draft 2009 New York State Energy Plan (Plan). The Partnership is a voluntary program that works closely with clean energy stakeholders to facilitate the development of new combined heat and power (CHP) projects and to promote their environmental and economic benefits.

The Partnership's objective is to identify and work through barriers that prevent the successful implementation of CHP. We cultivate opportunities in all market sectors to distinguish mechanisms that best facilitate CHP deployment. It is in this role, with our national and local experience promoting clean energy including energy efficiency and CHP, that the Partnership is submitting comments to New York's 2009 State Energy Plan Draft.

Our partners represent a cross-section of the industry and include CHP manufacturers, developers, end-users as well as non-profit and local governments. As of June 2009, the Partnership has more than 300 Partners dedicated to promoting and installing CHP. Many of these Partners are based in or are active in New York, including Starwood Hotels and Resorts Worldwide, Cornell University, NYSERDA, NYPA and LS Power Development. Over the eight years of operation, we have assisted more than 410 CHP projects, representing 4,604 megawatts (MW) of new CHP capacity. On an annual basis, these projects will prevent the emission of 12.5 million metric tons of carbon dioxide equivalent. These emissions reductions are equivalent to the emissions from 2.3 million passenger vehicles per year.¹

An integral part of our program is the ENERGY STAR CHP Award that recognizes projects requiring at least 5 percent less fuel than state-of-the-art separate heat and power generation. Recently we presented such an award to a New York dairy operation. Patterson Farms is a 1,000 dairy cows and young stock farm on 2,400 acres in Auburn near Cayuga Lake in upstate New York. It operates a biomass CHP system installed with assistance from NYSERDA. Even with the unique challenges to the use of biomass in a CHP system, this particular system has an operating efficiency of approximately 58 percent. It also requires approximately 6 percent less fuel than typical onsite thermal generation and purchased electricity.

¹ Combined Heat and Power Partnership, US EPA can be accessed at <http://www.epa.gov/chp/index.html>

We commend New York for the comprehensive approach taken to devise the Plan, weaving both supply-side and demand-side strategies to produce cost-effective, short and long-term sustainable results. We laud the Plan's recognition of CHP as a cost-competitive alternative to both strategies. Based on our experience to date, CHP has the potential to provide additional benefits to New York were the Plan to:

- Expand CHP technologies' role in institutional, commercial, agricultural, industrial, and residential end-use sectors, including low-income multifamily;
- Expand financial incentives beyond those stated to augment activities currently being conducted by NYSERDA and others in the State²;
- Recognize the role of CHP and Distributed Generation (DG) in energy security and smart-grid applications;
- Explore the benefits of CHP in a district energy setting as has been recognized in New York City in PlaNYC at this time; and
- Consider output-based regulatory concepts that encourage energy efficiency and CHP by relating emissions to the productive output of the process rather than the amount of fuel burned.

Our comments are organized according to the five strategies of the draft 2009 New York State Energy Plan, and provide information on the additional benefits of CHP within the Plan framework.

Strategy 1: Produce, Deliver and Use Energy More Efficiently

New York believes the most economical approach to expanding the State's Clean Energy Economy is investing in end-use energy efficiency. To that extent, the Plan addresses the role of energy efficiency in the State's short-term and long-term goal and describes the role of CHP in particularly improving commercial building efficiencies (Page 12). The Plan within that context recognizes the incentives to be provided for DG. The Plan also recognizes the role CHP plays in the use of natural gas particularly for commercial and industrial applications (Page 26)

The Partnership believes that there is a role for CHP that goes beyond those articulated in the proposed Plan. A recent analysis of CHP installations shows that New York State currently has over 5,800 MW of CHP installed capacity, including 305 commercial sites and 82 industrial sites.³ On average these facilities improve energy efficiency by up to 80%, when comparing both heat and electricity generation. This dramatic energy savings potential would significantly improve carbon dioxide emissions and reduce operating costs thereby improving economic

² "New York Incentives", Northeast CHP Application Center can be accessed at <http://www.northeastchp.org/nac/regional/NYincentives.htm>.

³ "Current CHP Installations – State by market Sector", Energy and Environmental Analysis Inc, Supported by US DOE and Oak Ridge National Laboratory, October 26, 2007.

viability, and create new jobs.

A 2002 NYSERDA report⁴ identifies nearly 8,500 MW of technical potential for new CHP in New York at 26,000 sites over the next decade. Modeling forecasts revealed in a base case scenario, an estimated 764 MW of CHP could be installed by the year 2012, whereas in the accelerated case scenario, market penetration reached nearly 2,200 MW during the same time frame.

The potential for CHP can, therefore, be very significant in reaching the State's energy efficiency, renewable energy, and climate goals. The same NYSERDA report has identified the greatest opportunities for CHP project development in the smaller size range. The Partnership encourages New York to look for opportunities to capitalize on the benefits provided by CHP systems beyond those identified in the draft energy plan, by recognizing:

- The role of CHP and DG not just in commercial settings but in industrial, institutional, residential and agricultural settings. The State has already taken the effort to allow CHP projects to be financed under the Dormitory Authority of the State of New York (DASNY). The DASNY is applicable for public and private universities, not-for-profit healthcare facilities and other institutions which serve the public good. However, the State has an opportunity to expand beyond those opportunities and include the larger spectrum of CHP applications in other institutional settings but also industrial, residential and agricultural settings. All feasible applications will have the capacity to produce, deliver, and use energy more efficiently as well as support development of in-state energy supplies;
- The CHP potential in the emerging applications in the multi-family sector with potential for both low-income and market-rate buildings. The State has gained general experience from the Green Building Tax Credit Legislation. (<http://www.dec.ny.gov/energy/1540.html>) There are opportunities to translate that experience, where applicable, to the use of CHP in the Weatherization Assistance Program (WAP) for these building sector types;
- The effectiveness of CHP in other district energy settings and expand on the work being conducted under PlaNYC to the State of New York; and
- Identify additional opportunities for DG and CHP to meet peak load demands.

Strategy 2: Support Development of In-State Energy Supplies

The Plan looks to produce and use in-state energy resources, and primarily renewable resources and natural gas, to increase the reliability and security of energy systems. Amongst other recommendations, the Plan also looks to create a tracking and trading system for renewable energy credits, improve net metering laws and encourage the development and use of sustainable biomass.

⁴ Combined Heat And Power Market Potential For New York State, Final Report 02-12, October 2002, NYSERDA.

CHP is a proven technology that uses indigenous heat in buildings to save energy. Utilizing this heat to produce electricity avoids off-site power generation with the significant losses that result from the production, transmission and distribution of traditional power sources. CHP provides reliable power that increases production, delivery, and usage efficiencies.

To that extent, we applaud the State's inclusion of CHP in its portfolio of options to meet the Plan's goals of reducing electricity usage 15% below 2015 forecasts, and increasing the proportion of renewables to meet overall State generation to 30% of electric demand by 2015. In particular, we recognize CHP's inclusion in the State's choice of expanding net metering laws (Page 43) by adding residential micro-CHP systems to the list of currently eligible technologies. The Partnership also lauds the Plan's recognition of CHP in its menu of beneficial, renewable DG resources (Page 47) with specific targets determined by the Public Service Commission (PSC).

The Partnership recognizes and encourages the inclusion of DG in the Customer-Sited Tier of the Renewable Portfolio Standard (RPS) Program. Other states have included CHP in incentive programs, and this could be done in the Plan in the Customer-Sited Tier technologies for financial incentive offerings (Pages 41-42). While it is specifically called out in the Recommendations Section, (page 93) additional clarity in Section 3.1.2 could be helpful. This would allow CHP to be on a level playing field with other DG technologies. While CHP is highly application-specific based on the configuration of the facility it serves, it is adaptable to many applications as evidenced by the following examples from Partnership members in the State of New York:

- Van Zelm Heywood and Shadford have shown how to apply CHP in a residential building while handling interconnection issues⁵;
- Bette and Cring installed a CHP system, the Burrstone Energy Center Plant in Utica, NY that provides three different institutional sector customers electricity, and one of these all of the rejected heat from the plant in a uniform configuration. It will export some excess power back to National Grid⁶.

The Partnership recognizes the importance of addressing energy reliability and security to energy systems as part of the State Clean Energy Economy. We have seen CHP's use in smart grid applications that address energy security and reliability. Princeton University, a member of the Partnership, recently demonstrated the use of CHP in its district energy system that was built utilizing smart grid criteria⁷. CHP is an important resource now, and as we look forward to

5 "Metropolitan Application: Cycling CHP Technology and an Interconnection Success" presented at EPA CHP Partnership Annual Meeting October 1, 2009 and can be accessed at http://www.epa.gov/chp/documents/meeting_100209_camean.pdf.

6 "Burrstone Energy Center Plant" presented at EPA CHP Partnership Annual Meeting October 1, 2009 and can be accessed at http://www.epa.gov/chp/documents/meeting_100209_moynihan.pdf.

7 University CHP, District Energy and Smart Grid Application. Presented by Tom Nyquist, Director of Facilities Engineering, Princeton University at EPA's Annual CHP Partnership Annual Meeting, October 1, 2009 and can be accessed at http://www.epa.gov/CHP/documents/meeting_100209_nyquist.pdf.

increased utilization of smart grid technologies, it has the potential to be an even more significant player.

The Plan also identifies the role of biomass in the State's place to reduce dependence on heating oil and gasoline. The Partnership has found that biomass and other biogenic opportunity fuels are frequently used as fuel for CHP systems⁸. By employing such alternative fuels, there would be fuel choices available in addition to heating oil and gasoline. Raising awareness and benefits of such alternate fuels could present an opportunity to meet the Plan's goal as laid out in this Strategy.

The Partnership lauds the efforts of the State of New York for being in the forefront of issuing standard interconnection requirements for DG systems. New York was the second state to adopt uniform interconnection standards for DG systems. Through this step, the State has recognized the role CHP technology could help level peaks by sequencing at heavy demand times. There still remain barriers to CHP making a more significant contribution to the Plan's energy efficiency and renewable energy goals. Based on the Partnership's experience, it would be helpful to specifically cite CHP within the DG portfolio described in this Strategy.

Strategy 3: Invest in Energy and Transportation Infrastructure

The State's objective in advancing this Strategy is to provide a backbone to ensure high standards of infrastructure reliability which will support the State's transition to a Clean Energy Economy. To that extent, the State looks to develop a Climate Action Plan to reduce GHG emissions by 80 percent by 2050, and encourage repowering of existing facilities where justified by reliability, economic and environmental benefits. It is in these two criteria in particular that the Partnership sees the role of CHP and recommends their inclusion within this strategy.

CHP offers energy and environmental benefits over electric-only and thermal-only systems in both central and distributed power generation applications. CHP systems have the potential for a wide range of applications and the higher efficiencies result in lower emissions than separate heat and power generation.

The Partnership recognizes the New State Department of Environmental Conservation (DEC)'s consideration of updating emission rules for distributed generation (6 NYCRR Part 222: Distributed Generation). In tandem to that effort, the State could consider output-based regulations to facilitate CHP.

Strategy 4: Stimulate Innovation in the Clean Energy Economy

In this Strategy, the draft Plan recognizes the valuable role innovation plays in the energy and transportation sectors and in addressing climate change challenges. The Plan specifically cites the push towards a low-carbon, clean energy future. The Plan provides a path for stakeholders to promote "cradle to grave" energy efficiencies, and encourages the financial and

⁸ "Opportunities and Resources for Biomass Combined Heat and Power", EPA CHPP can be accessed at http://www.epa.gov/chp/basic/biomass_fs.html

workforce development investment necessary to meet the State's energy, GHG reduction, affordability, and in-state resource requirements while remaining vibrant and competitive.

CHP is versatile and can be coupled with existing and planned technologies for many different applications in the industrial, commercial, and residential sectors. Providing opportunities to allow for innovative uses of CHP systems in these sectors, could further capture its benefits in the state. We have seen various applications showcased by Partners in New York to help meet their climate change challenges.

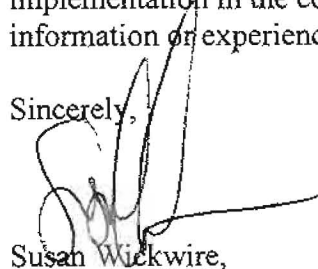
As part of the workforce development process, particularly as it pertains to the low-income Weatherization Assistance Program, New York could assess CHP and its applications for inclusion in the training process. This is being considered at the national level as having potential for the multi-family housing sector.⁹

Strategy 5: Engage Others In Achieving the State's Policy Objectives

In this Strategy, the Plan recognizes the critical role local governments and communities play in the overall effort to meet the State's energy policy objectives. The EPA has seen the same benefits through its work in clean energy and more recently with a grant solicitation from local governments and communities to use and showcase climate change initiatives. CHP was one of these approaches that communities submitted to meet their sustainability objectives. The Partnership lauds the State's efforts in recognizing CHP's inclusion in its vision of a Clean Energy Economy and recommends the Plan identify CHP in its menu of options for municipalities Smart Growth and Climate Smart Communities Plans and thereby address their overall sustainability goals.

In summary, the Partnership commends New York State for developing the draft 2009 New York State Energy Plan. We thank you for this opportunity to comment and again we applaud your vision in comprising this comprehensive approach to long-term strategic energy planning. We look forward to working together in partnership with New York on the Plan's implementation in the coming years. Please contact me if EPA can assist by providing further information or experiences from other states.

Sincerely,



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⁹ "Promoting Combined Heat and Power (CHP) for Multifamily Properties", presented at ACEEE by Robert Groberg, US Department of Housing and Urban Development (HUD) and Mike MacDonald and Patti Garland, Oak Ridge National Laboratory (ORNL).